



Stern Stewart Research

Global Automotive OEs

Best of Times, Worst of Times

Justin Pettit
(212) 261-0706

jpettit@sternstewart.com

Eric Desautel
(212) 261-0765

desautel@sternstewart.com

Devin Millar
(212) 261-0683

dmillar@sternstewart.com

Ahmar Ahmad
(212) 261-0643

aahmad@sternstewart.com

James Singer
(212) 261-0767

jsinger@sternstewart.com

- Stern Stewart & Co.'s automotive practice undertook an economic review of 14 global automotive OEs. After recasting all data to an "apples-to-apples" economic basis with EVA[®], we evaluate the economics of the industry, benchmark both performance and valuation, and relate these to strategy.
- Unable to earn a return in excess of the cost of capital, the industry creates little wealth, – almost one-half of the OEs have destroyed wealth (MVA), and the top four account for 92% of the industry's wealth creation. Most OEs are pursuing a strategy of global partnerships and mergers, but the evidence on forays in *scale* is mixed.
- Automotive valuations imply strong expectations for performance *mean-reversion* – with the most upside expected from the worst performers, and the least expected from the best performers (except Honda, the industry's star – premium performance matched with a premium valuation). Chronic inadequate returns reinforce the industry's weak valuations.
- Higher net profit margins do *not* support higher valuations, and are capitalized at a discount - corresponding to weaker relative valuations. However, *gross margins do* support premium valuations – their performance 'boost' is fully capitalized into values as a more *sustainable source of competitive advantage*. R&D spending, though not a meaningful drag on current performance, is *highly* correlated with valuation *premiums*.
- The "New Economy" makes fulfillment, delivery and operational excellence a strategic imperative. Supplier e-auctions and capital off-loading (e.g. tooling) will prove unsustainable unless the supply chain is fundamentally leaned. Yet despite 20 years of initiatives: lean manufacturing, theory of constraints, pull systems, SPC, TQM, and now Six Sigma, "The Goal" remains elusive. Every company has a showcase facility, but success is difficult to sustain and replicate on a global corporate scale.

EVALuation is a series of periodic reports from Stern Stewart & Co., drawing on the depth of our experience and internal research, to cover issues of valuation, organizational design, decision making, remuneration, and corporate governance. We assist in understanding how actions affect value. We believe that all stakeholders benefit from the creation of value through both innovation and efficiency.

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OE WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

OVERVIEW

Stern Stewart & Co.'s automotive practice compiled and analyzed data from 14 publicly traded global OEs to benchmark financial performance, valuation, and strategy. Our review identified and adjusted material accounting issues, including operating leases, unusual items, deferred taxes and employee pensions to establish a comparable economic basis for measurement and evaluation.

The industry cannot earn its cost of capital over the business cycle ... almost one-half of the OEs destroyed wealth.

Unable to earn a return in excess of the cost of capital over most of the business cycle, the industry creates little wealth, measured by the excess enterprise value over book value – almost one-half of the OEs have destroyed wealth, and the top four account for 92% of the industry's wealth creation.

Many OEs are pursuing a strategy of global partnerships and mergers, but the evidence on forays in global *scale* is mixed. The Daimler-Chrysler merger created \$53B of wealth through year-end 1999, though this is now in question.¹ Meanwhile, the GM-Delphi *demerger* also led to \$6B of new wealth creation. Honda is the industry's star – premium economic performance matched with a premium valuation. Porsche too, successfully defies the conventional wisdom of a need to reach a "critical mass."

Valuations imply a mean-reversion expectation ...

Automotive valuations imply a strong expectation for performance *mean-reversion*, with the most upside expected from the worst performers, and the least upside expected from the best performers. The trend also holds temporally, with cyclicity driving multiples to expand in poor times and compress in good times. In fact, higher net profit margins do *not* support higher valuations, and in fact, are capitalized at a discount, corresponding to weaker relative valuations. However, *gross margins do* tend to support premium valuations – their performance 'boost' is fully capitalized into values – as a more *sustainable source of competitive advantage*.

... gross margins, R&D intensity, and capital utilization all support premium valuations.

R&D spending, though not a statistically meaningful drag on current performance, is *highly* correlated with valuation *premiums* in the automotive industry – not only is the expense "capitalized", but at a very high multiple, boosting market expectations for future performance.

Conversely, while overhead (SG&A) costs are not a statistically significant drag on current performance, they are definitely correlated with valuation discounts – perhaps as a market signal of poor control. We also found *velocity* (asset utilization) to be a source of advantage on which the market places a premium in valuations – *capitalized as a sustainable advantage*.

Benefits from e-auctions & capital off-loading (tooling) will not be sustained unless supply chain is fundamentally leaned.

Channel strategies aside, the "New Economy" makes operational excellence a strategic imperative. Benefits from e-auctions and capital off-loading (e.g. tooling) will prove unsustainable unless the supply chain is fundamentally leaned. Yet despite 20 years of initiatives: lean manufacturing, theory of constraints, pull systems, SPC, TQM, and now Six Sigma, "The Goal" remains elusive - success is difficult to sustain and replicate on a global corporate scale.

GLOBAL OE ECONOMICS

Industry wealth creation, as measured by the excess enterprise value over book value, or Market Value Added (MVA), among OEs is poor – only 9 out of 14 OEs have created any wealth, and the top four OEs accounted for 92% of the industry's \$208 billion in wealth creation (Figure 1).

Figure 1 depicts a rank ordering of the Global OE industry's major participants based on MVA at year-end 1999. MVA is the excess enterprise value over its book value, or total capital employed. If management has made the company more valuable as a going concern than the value of total capital invested – it has created wealth.

For example, Honda has an enterprise value of \$54.7 billion, yet only \$35.5 billion of capital is invested – thus \$19.2 billion of wealth has been created – \$1.54 has been created from each dollar

¹ These calculations do not reflect the more recent downward movement of Daimler-Chrysler's stock price (\$78 end December 99 vs. \$41 November 00), but even now a 15% increase remains.



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Honda has created \$1.54 from every dollar – Fiat has turned each dollar into 68 cents.

invested. Fiat has a similar enterprise value - \$37.0 billion, yet it has \$53.9 billion of capital invested, and has thus destroyed \$16.9 billion of wealth, as measured by MVA – each dollar has been turned into 68 cents.

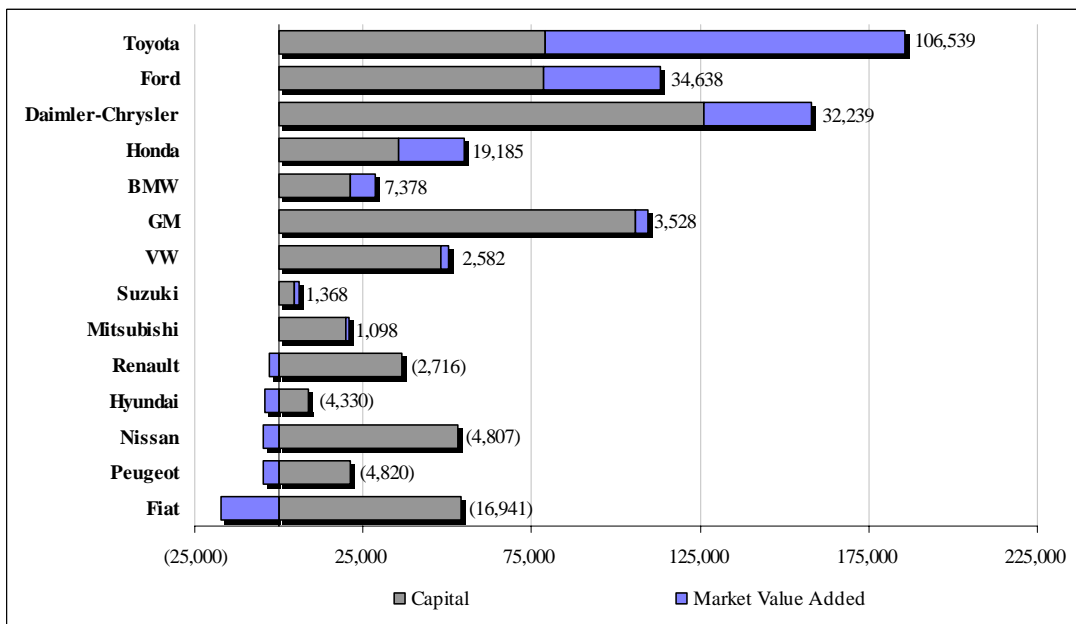


Figure 1. 1999 Enterprise Value (\$MM)

The industry never earned its cost of capital in the past decade – too much capital is allocated to this sector.

Figure 2 shows the industry return on capital, cost of capital and Economic Value Added (EVA), over the past 9 years. Returns have fallen well short of the cost of capital – an uneconomic industry in need of major change. The gap has been dramatically narrowed – with North American and European volumes reaching peak levels, OEs are enjoying the best of times in current performance (though EVA is still negative), yet expectations implicit in valuations seem to call for the worst of times ahead. With too much capital plaguing the industry, it seems returns will never exceed the cost of capital.

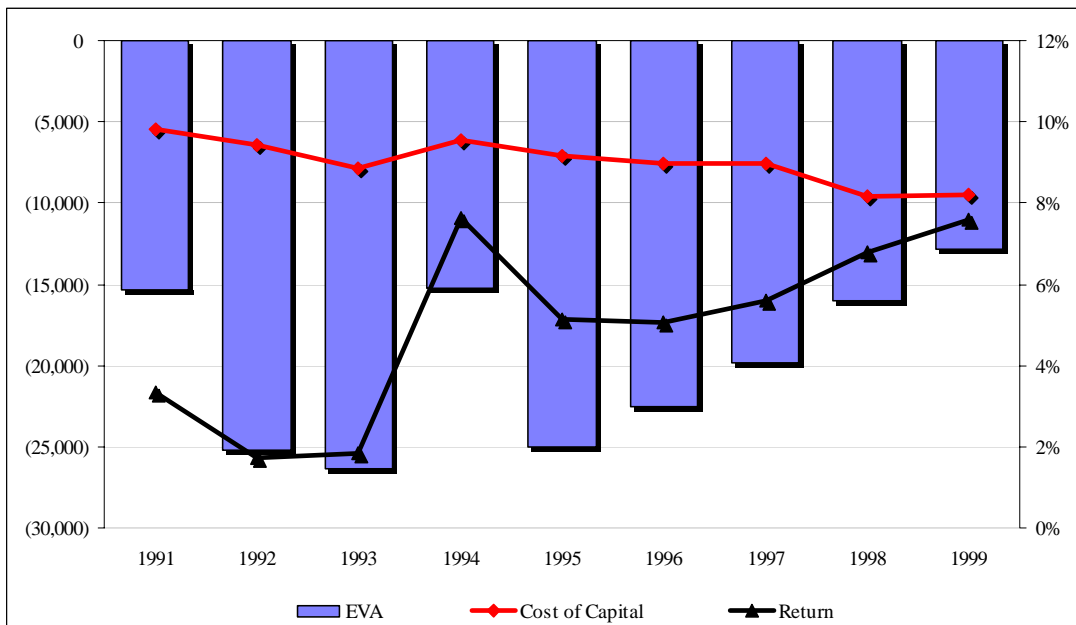


Figure 2. The Industry Never Earned its Cost of Capital in the Past Decade



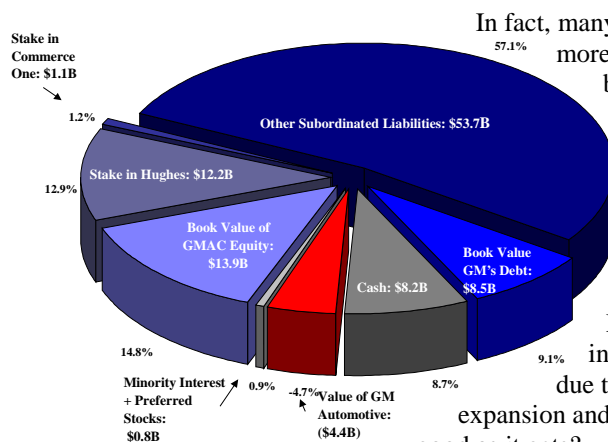
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IS THE SECTOR OVERSOLD?

Multiples are compressed and values are plummeting – is the sector ‘oversold’?

Automotive valuations seemed incredibly low at the end of 1999, spurring many to question if the market was ‘oversold’. Auto values have plummeted further in 2000, though now generally accompanied by operational issues, earnings disappointments and a softening outlook for volumes. So the question remains – has it been overdone – is the sector undervalued?

... many break-up values look quite attractive ...



In fact, many companies may now appear to be more attractively valued on a constituent basis – Figure 3 illustrates the case of November 2000 component valuation for General Motors. But while ‘break-up’ values may look favourable, this does not justify higher going concern values – it just makes the case for an intervention.

Multiple compression has been an industry trend for several years (Fig. 4), due to sustainability concern over margin expansion and cyclical volumes – is this the peak? As good as it gets?

Figure 3: GM Break-Up Value

	Price/Earnings	MV/EBITDA	FGV/MV	NOPAT/Sales
1997	25.7x	7.5x	50%	3.8%
1998	21.6x	11.2x	43%	3.9%
1999	21.5x	9.5x	38%	4.6%

... yet profits have disappointed, volumes have peaked and the sector still can't earn its cost of capital ...

Figure 4. Multiples have been Compressed over the Past Three Years

If so, the sector has still not earned its cost of capital, posting negative EVA even in its best year. Chronically poor economics show the current pace of transformation to be too slow (Fig. 5). Our own modeling suggests, given the volume outlook and even conservative assumptions for capital growth, significant margin expansion and earnings growth is still implied in today's stock prices.

... given the volume outlook and even conservative capital growth, significant margin expansion and earnings growth is still implied in today's stock prices.

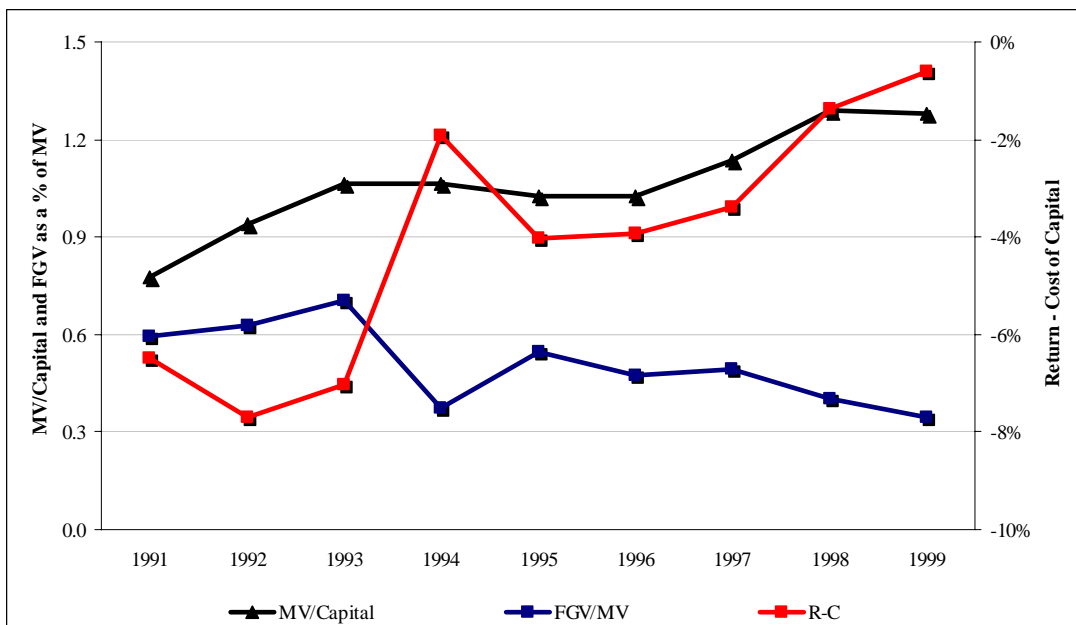


Figure 5. Performance and Expectation Move in Opposite Directions



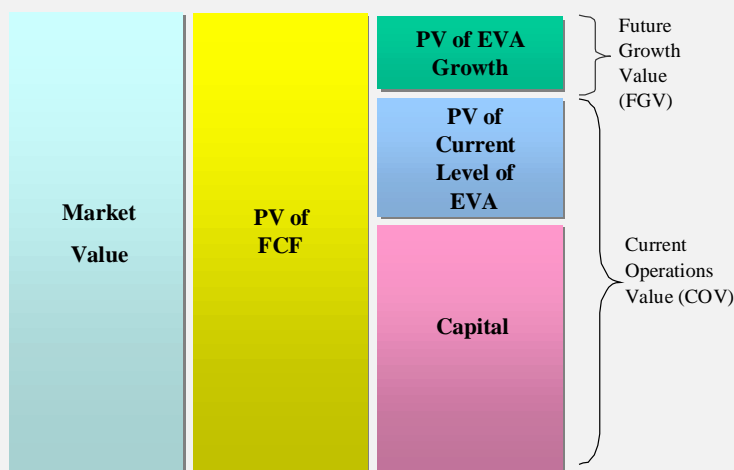
Performance, Value & Strategy

Many of us complain that pennies are simply not worth the effort – why then, when a company announces that it will miss quarterly earnings estimates by a mere penny, does the stock plummet? When does a penny matter?

Simplistically, one can express a company’s value as the net present value of all future cashflow.² While present value concepts are more easily, and therefore more commonly, applied to fixed income valuation (e.g., the value of bonds), the same concept also holds for stocks, albeit with much less certainty in the forward numbers. Therefore, a business generating \$100 per year, every year, can be valued into perpetuity as \$1000, assuming a 10% cost of capital, or time value of money ($\$100 \div 10\% = \1000). This base, or zero-growth, case implies a “multiplier” of 10 times operating cashflow, and is the current operations value (COV).³

Now, let’s try a growth case where operating cashflow grows at a rate of 5% per year, forever. While many of us might think that forever is a long time, it may not be long enough to justify some of the recent internet stock prices! Our simple case can be valued on a present value basis at $\$100 \div (10\% - 5\%)$, or \$2000. The growth case implies a multiplier of 20 times and happens to illustrate a price level common to today’s marketplace, where many stock prices imply a multiplier of 20 times or more. In this example, the market has based one half of the stock price on the present value of current operating cashflows, forever, and the other half on profitable growth expectations above this level – i.e., fifty percent of the value is COV, while the remainder is future growth value (FGV). The FGV term subsumes not only expected growth, but also implicitly values any real options. For example, the 5% growth assumption might really be a proxy for a 90% likelihood of no growth, and a 10% chance of 50% growth.

Strategically, enterprise value is maximized through the simultaneous maximization of Current Operations Value (COV) and Future Growth Value (FGV)



Strategically, enterprise value is *not* maximized solely through the maximization of Current Operations Value (COV), but through the simultaneous maximization of the sum of *both* COV and Future Growth Value (FGV), including the value of real options.

While the valuation of internet stocks might be interpreted as proof of a patient and forward-looking stock market, leading business strategists are concerned that many of today’s corporations remain overly fixated on the *near-term*.⁴ The implications for business strategy, financial policy, financial management and compensation strategies are far-reaching.

² This can also be expressed as the mathematically equivalent sum of capital and the present value of all future EVA.

³ The current operations value can be also expressed as the sum of capital invested, plus the present value of current EVA into perpetuity, with no growth. The nominal zero-growth assumption implies decay in real terms.

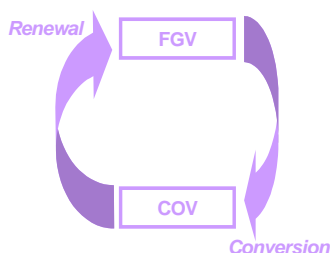
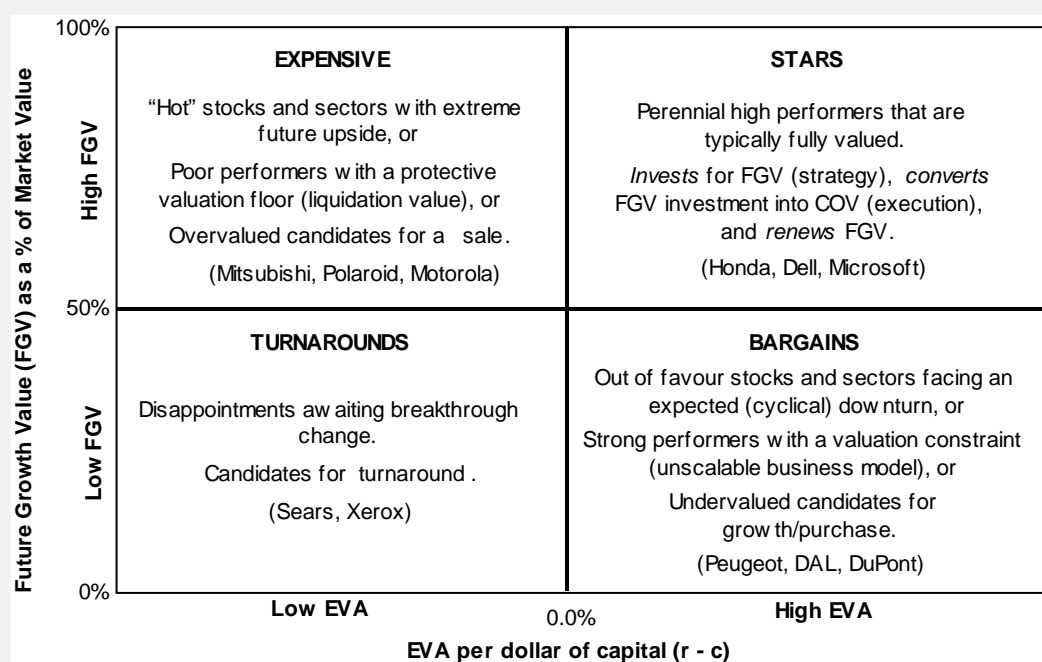
⁴ See, for example, the roundtable discussion led by C.K. Prahlad of the University of Michigan, *Journal of Applied Corporate Finance*, Volume 12, Number 2 (Summer 1999).



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When a company misses its earnings number, what are the implications for its net present value? If the miss has no implications for the future, the value of the stock is reduced by only *one cent*. A miss expected to persist for four quarters is worth *four cents*. A permanent miss, using our multiplier of 10 times, is worth *40 cents*. If the shortfall has implications for growth opportunities, we might expect a much larger impact, like our example with a 20 times multiplier. A one-penny shortfall on the quarter can thus be worth a 40-cent reduction in the perpetuity value, and another 40-cent reduction in growth value – an *80-cent* impact!

A healthy dose of investor prudence can lead to a larger stock price impact – where there’s smoke, there’s fire. Managers have significant financial incentives to do just about anything to avoid falling short. And aggressive accounting practices often understate how bad things really are (e.g. revenue recognition, offsetting gains and losses, and reversals in acquisition, restructuring, warranty, bad debt, inventory and actuarial reserves). So when a company does miss by a penny, it may warrant a more dramatic, downward revision of expectations and FGV.



The matrix maps companies based on both financial performance (EVA) and valuation (FGV). Both qualities are scaled on company size for comparability, giving us Future Growth Value as a percentage of total enterprise value, and return on capital versus cost of capital.

Superstars (Honda, Dell, Microsoft) are perennial high performers that enjoy full valuations, with strategies to invest in the intangibles that drive FGV, convert FGV to COV through operational excellence and great execution, and perpetually renew FGV for their future.

Turnarounds (Sears, Xerox) are perennial disappointments awaiting breakthrough change. “Hot” stocks and sectors with high expectations for upside, or poor performers with a valuation floor often seem **Expensive** and can be candidates for sale (Mitsubishi, Polaroid, Motorola).

Bargains are often out-of-favour stocks and sectors or cyclicals facing a downturn, or strong performers with a valuation constraint (unscalable business model) that may be candidates for investment (DuPont).



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PERFORMANCE BENCHMARKING

More than half the industry was unable to earn its cost of capital in a good year ...

Financial performance, ranked in terms of EVA as a percentage of capital (the spread between the return on capital and cost of capital), for each OE in 1999 is charted in Pareto form in Figure 6 – dollarized amounts are denoted in the labels above each bar – most are negative, or near zero.

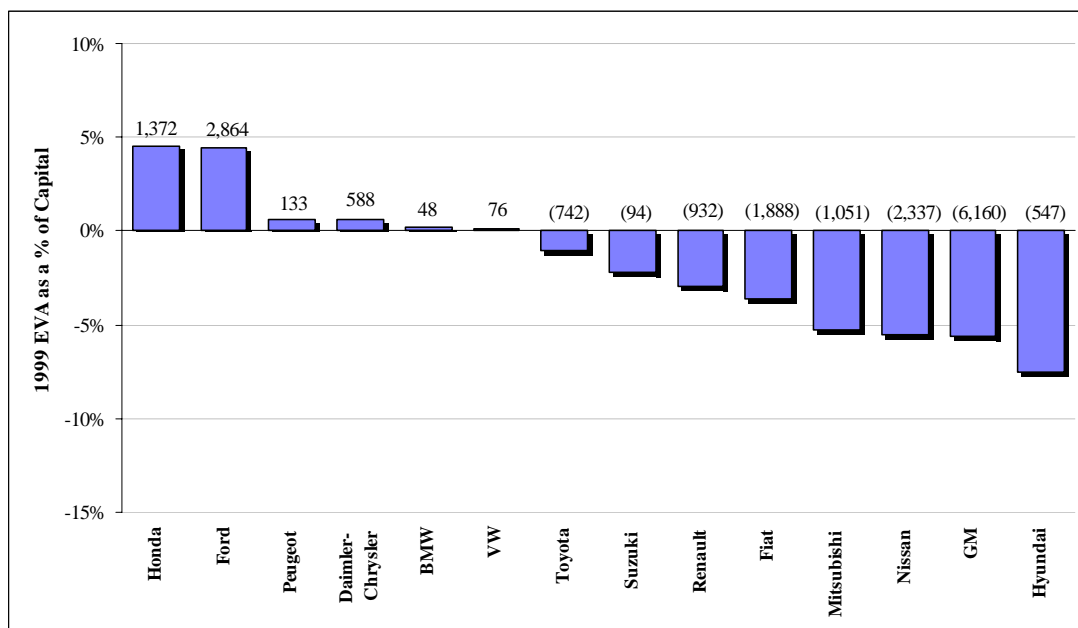


Figure 6. Even In A Good Year, More Than Half of the OEs Destroy Value

... despite the ‘buzz’ around high velocity business models in the “New Economy”, OEs remain plagued with capital.

In Figure 7, BMW and VW highlight the impact of a business model’s capital utilization, or *velocity*, in driving financial performance. VW’s margin of 5.3% trails BMW’s 7.5% - but asset turns are 5.9x for VW (4.6x at BMW) and working capital 36.5% of sales (63.8% at BMW); thus, returns on capital are almost equal and VW’s EVA is actually slightly larger. Honda is an even more extreme case, with asset turns of 6.2x and working capital of only 28.7%. Clearly, Honda’s lean production model also contributes to their significant profit margin advantage (7%).

OE (1999)	NOPAT Margin	NWC/Sales	Asset Turns	Return on Capital	EVA (\$MM's)
Honda	7.0%	28.7%	6.2x	12.6%	1,372
Ford	6.6	3.5	3.9	13.8	2,864
Peugeot	5.2	37.6	3.7	9.3	133
Daimler-Chrysler	5.5	39.5	3.3	8.6	588
BMW	7.5	63.8	4.6	8.7	48
VW Group	5.3	36.5	5.9	8.4	76
Toyota	4.7	21.0	3.1	7.4	(742)
Suzuki	2.3	12.1	5.7	6.4	(94)
Renault	3.6	57.8	4.3	4.7	(932)
Fiat	4.1	52.2	3.0	3.9	(1,889)
Mitsubishi	0.5	20.5	2.4	0.7	(1,051)
Nissan	0.6	19.8	2.1	0.8	(2,337)
General Motors	2.6	0.5	4.3	3.7	(6,160)
Hyundai	1.5	1.4	2.6	2.4	(547)

Figure 7. BMW vs. VW – The Capital Velocity Opportunity

Despite the ‘buzz’ around high velocity business models (Wal-Mart, Dell, Amazon) in the “New Economy”, asset turns among OEs remain poor – the industry is plagued with too much capital.



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VALUATION BENCHMARKING

Figure 8 charts the valuation premiums (Future Growth Value as a percentage of total Enterprise Value) for each OE, in descending order, at 1999 year-end. While Mitsubishi and Nissan show the highest expectations implicit in their values, their extremely poor financial performance (which can't help but improve) and a minimum possible enterprise value drive these results.

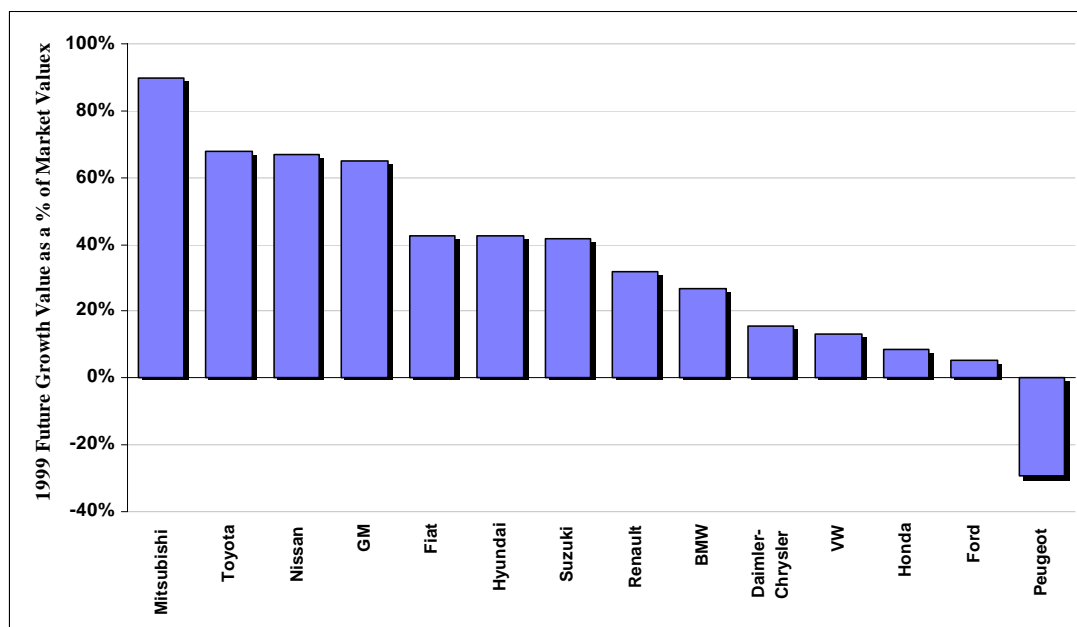


Figure 8. Very Low Expectations Implied by Valuations

The better performers exhibit the lowest valuations – mean-reversion implies no sustainable competitive advantage.

Conversely, many of the better performers exhibit the lowest valuations – values that imply limited upside (Ford), or even expectations for a decline in performance (Peugeot). Valuation premiums typically exhibit such mean-reversion characteristics in cyclical commodity industries – those with little to no *sustainable competitive advantage*. Auto values are dampened by the view that volumes have peaked, compounded by chronic inadequate returns. Honda tends to defy the trend – carrying both a performance premium *and* a valuation premium, implying a sustainable advantage in their business model – perhaps its lean enterprise and operational excellence.

	Absolute (1999)			NOPAT/ Sales	Relative (1999)	
	P/E	EV/EBITDA	FGV/MV		P/E	EV/EBITDA
Mitsubishi	11.3x	11.9x	90%	0.5%	0.4x	1.1x
Nissan	N/A	21.2	78	0.6	N/A	2.0
Toyota	63.7	25.0	70	4.7	2.3	2.4
GM	8.4	7.2	63	2.6	0.3	0.7
Hyundai	8.5	5.9	56	1.5	0.3	0.6
Suzuki	70.3	7.7	45	2.3	2.5	0.7
Fiat	44.3	5.9	44	4.1	1.6	0.6
Renault	21.4	9.3	38	3.6	0.7	0.9
Daimler-Chrysler	14.4	6.6	25	5.5	0.5	0.6
BMW	43.6	6.9	15	7.5	1.5	0.7
Honda	24.2	20.0	13	7.0	0.9	1.9
Ford	9.3	7.4	11	6.6	0.3	0.7
VW	28.4	3.7	11	5.3	1.0	0.3
Peugeot	14.7	4.7	-28	5.2	0.5	0.4

Figure 9. December 1999 Valuation Summary: Expectations of Mean Reversion



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Facing historically low valuations, many are asking, “how do we ‘DotCom’ ourselves?”

... digital strategies should lead to a more effective extended enterprise – a leaner, more responsive supply chain ...

... operational excellence remains one of the most important keys – but how to get it out of the annual report and into the plants?

The Internet & Automotive Strategy

With automotive companies facing historically low valuations, they cannot help but compare their meager price-earnings ratios of 5-8 times to the still stratospheric multiples of Internet companies (even after the correction) and ask themselves – “how do we ‘dot.com’ ourselves?”

But First, The Today Map

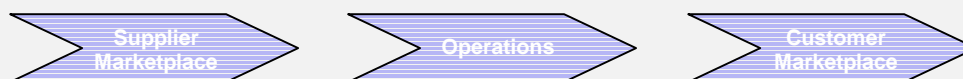
On the supply side, suppliers have been facing pricing pressure for years – one of the few industries where annual price deflation is the norm. Unlike microprocessors, an enhanced offering does not generally offset price deflation – realized prices actually decline. Says one supplier, “they beat us up with the telephone, the fax and now the Internet.” Dedicated EDI networks have been prevalent for years. Furthermore, many purchases are not commodity products and MRO, but highly engineered components, modules and systems. Much of the impact of the B2B exchanges – increased standardization, lower information and coordination costs – may be overblown. However, digital strategies should enable a more effective extended enterprise model through increased intelligence, transparency and flexibility.

Internally, the assemblers have long been at work on ERP solutions, data warehousing and supply chain optimization, though the benefits remain distant, hard to quantify and harder to achieve. While Internet/Intranet solutions need not bring anything new, they may offer cheaper, more flexible solutions to the information system obstacles that plague this industry – ultimately leading to business models founded on improved speed, repeatability and scalability.

On the customer side of the business, we still dread those trips to a dealer – worse than the dentist, but not as bad as a bank – we face ill-equipped drones unable to appropriately respond to the inevitable problems and challenging situations. The business would be so much easier if not for the challenge of customer hopes, expectations and demands. The purchase is unpleasant, we wait too long for our order, it arrives with problems, and service remains a painful misnomer. Will Internet-based digital strategies bring a better user experience? The timely delivery of an error-free order – mass-customized and built-to-order, seems distant. However, digital strategies can only help with customer intelligence, demand management and the user experience.

Automotive Digital Strategies

The time has long passed for CEOs to garner attention with talk of retrenchment, cost cutting, efficiencies and labour costs – such tactical initiatives are now prerequisites, not news. Analysts want to understand CEO strategies for harnessing the Internet (e.g. B2B exchanges), digital strategies to re-engineer the industry – the supply chain, operations and the customer experience.



Strat. Goals	Manage Extended Enterprise	Operational Excellence (OE)	Customer Intelligence & Experience
	<ul style="list-style-type: none"> - Market intelligence - Market liquidity/fluidity - Collaborative dialogue - High utilization/lean - Pockets of excellence 	<ul style="list-style-type: none"> - Speed/lean - Repeatability - Scalability - Supply/demand lead time management & optimization 	<ul style="list-style-type: none"> - Better user experience - Improved customer intelligence - Real-time demand response - Interactive demand management - Targetting
Tactics	<ul style="list-style-type: none"> - EDI/Extranet - OE tools - Moral suasion - Value-based contracting - Commodity auctions 	<ul style="list-style-type: none"> - Intranet - Statistical process control/6σ - Lean production system - Lead Time Technology® - Build-to-order - Process discipline - Outsourcing/virtual networks 	<ul style="list-style-type: none"> - Dynamic segmentation - Mass customization - Data warehousing - CRM, EDI - RFT/6σ



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A digital transformation will improve liquidity and reduce transaction costs ...

... 'win-win' gains will come through improved standardization, specialization and utilization ...

But, a digital transformation will lead to a supplier marketplace – increased market efficiency through better, more timely information, transparency, liquidity and reduced transaction costs.

The OEs have long focused on reduced costs through direct labor hours per vehicle, workforce, floor space, supply chain management and engineering. A focus on core competencies is a prevalent trend – an emphasis on vehicle brand management, systems design versus component design, and the powertrain. There is also a trend to foster innovation in the consolidating supply base.

The suppliers look to increase vehicle content with limited capital investment – revenue from components, revenue from sequencing and light assembly, revenue from services. The suppliers are expanding their systems expertise and are moving to become an integrated business partner to increase opportunity for new business.

While considerable emphasis has been placed to date on the “win-lose” impact of VerticalNet and FreeMarkets type auctions to commodity contracts, the bulk of automotive purchasing does not fit into this category. The digital revolution can also bring the “win-win” gains of improved market efficiency through improved standardization, specialization and utilization. Market intelligence can be shared throughout the entire value-chain to improve transparency and market responsiveness while eliminating waste.

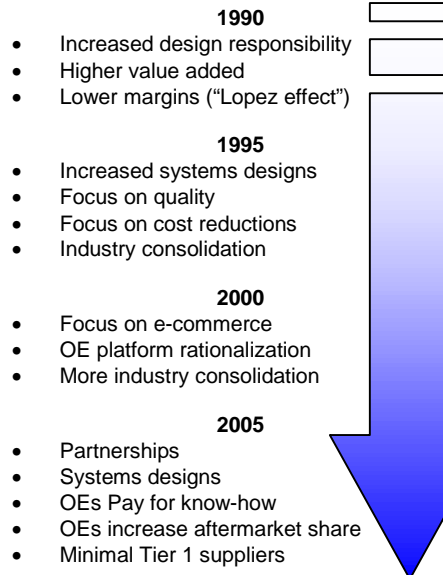
Real-time design, supplier-driven innovation, virtual companies or consortiums that bid on sub-systems, and outsourcing that continues to push vehicle content down the supply chain quicken the pace of product innovation. Systems integrators with sourcing control, particularly the more research & development-driven suppliers, will prevail with the most pricing power. Suppliers will also examine opportunities to disaggregate internal commodity businesses so they can freely align with other customers/suppliers and leverage commodity volumes.

Total value chain fixed costs and capacity supplied could be reduced as Tier One suppliers and OEs organize their hundreds of thousands of suppliers. Intranet applications that improve demand and physical flow visibility and JIT delivery should reduce the need for standby capacity and buffer stock. Statistical process control and improved supply lead time/demand lead-time coordination and optimization should also lean the supply chain and improve speed, quality and repeatability. Auctions will force commodity producers to lowest cost product strategies. An increased use of collaboration and shared resources through improved transparency and information flow is likely to replace the current convention of rampant duplicity of assets and efforts.

At the customer end, build-to-order optionality through B2C linkages will allow manufacturers to interact with end customers and signal changes in demand to the entire supply chain in real time. This should lead to more responsive product design and production volumes, as well as less WIP and finished goods inventory, overtime, premium freight, and sales incentives. Dynamic segmentation and mass customization can actually become realities with real-time customer interfacing, extensive data warehousing and the application of CRM tools.

If only the Internet could keep my new car batteries from going dead – maybe that’s for 6σ.

SUPPLY EVOLUTION



Source: Tenneco Automotive



Mergers & Demergers: Global Goliaths with Focus

The industry has witnessed tremendous activity in mergers, demergers, equity investments and partnerships – the auto-equivalent of airline alliances – toward a common end. Not only are the players getting much bigger, but they’re also getting more focused, with a few major alliances emerging in many areas (eg. heavy duty (Class 8), CI engines, small cars, low displacement/high-output SI engines, 2-stroke engines). It seems that SUVs are the only area still bucking this trend.

The Daimler-Chrysler merger still has created \$15B of value

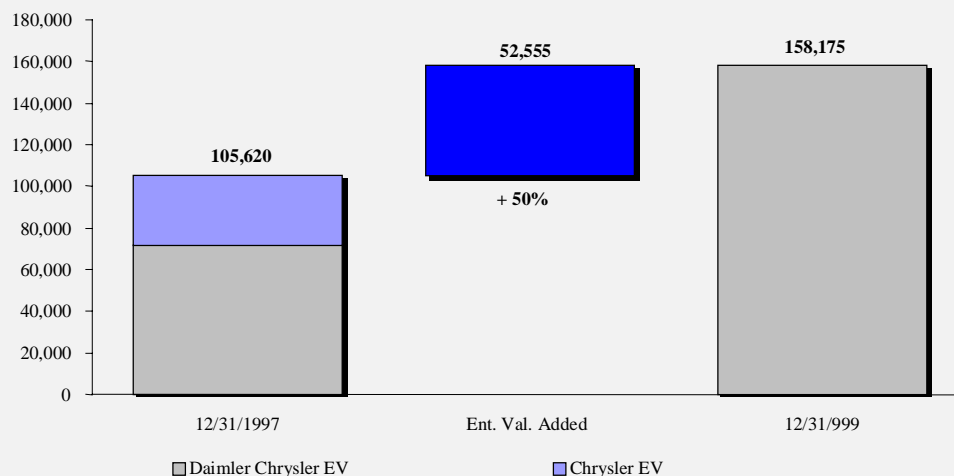


Figure 10. Daimler-Chrysler today is still worth more (\$15B) than before its merger.

Do the big deals create value? Two of the biggest have – as of 12/31/99 the Daimler-Chrysler merger had created \$53 billion in value. In fact, even after a decline this year that has removed more than \$30 billion from the enterprise value of Daimler-Chrysler, the merger has still led to a 15% increase in value. In addition, as of 12/31/99 nearly \$6 billion of value was created around the Delphi spin. In both cases, the value created by these transactions was not speculative, stock market illusion; rather, it has been created in current operations value (COV) – the net present value of normalized annual operating cashflow after tax has already increased by more than enough to justify the market cap increase – none of the increase is premised on increased expectations.

The GM-Delphi split created \$6B of wealth.

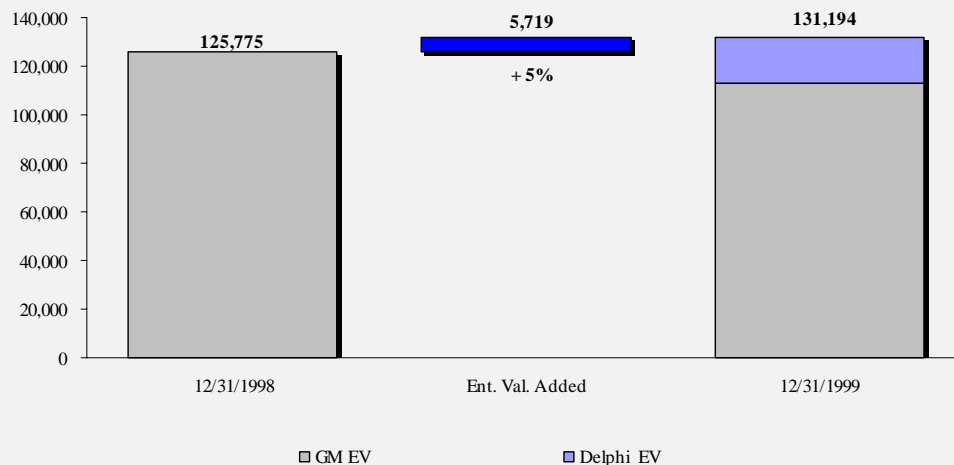


Figure 11. GM & Delphi are worth more (\$6B) apart than together.



OE WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

SUCCESSFUL OE STRATEGIES

Many OEs are pursuing a strategy of global partnerships and mergers, but the evidence on forays in global *scale* is mixed. Both the merger of Daimler-Chrysler and the split-up of GM and Delphi have created wealth. Meanwhile, Honda is the industry’s star – premium economic performance matched with a premium valuation. Porsche too, successfully defies the conventional wisdom of the need for a “critical mass” in size. Our regressions of size (revenue, capital, market value) against both performance and valuation were inconclusive.

Valuations imply an expectation of mean-reversion – no sustainable advantage – and thus a discounted cap factor

Automotive valuations imply a strong expectation for performance *mean-reversion*, with the most upside expected from the worst performers, and the least improvement expected from the best performers. The trend also holds temporally, with cyclicity driving multiples to expand in poor times and compress in good times. Thus, higher net profit margins do *not* tend to support higher valuations, and in fact, are capitalized at a discount, corresponding to weaker relative valuations. However, *gross margins do* tend to support premium valuations – their performance ‘boost’ is fully capitalized into values – as a more *sustainable source of competitive advantage*.

R&D and asset utilization earn premium values – a source of advantage

Research and development spending, though not a statistically meaningful drag on current performance, is *highly* correlated with valuation *premiums* in the automotive industry – not only is the expense “capitalized”, but at a very high multiple, boosting market expectations for future performance. Conversely, while overhead (SG&A) costs are not a statistically significant drag on current performance, they are definitely correlated with valuation discounts – perhaps as a market signal of poor control. We also found *velocity* (asset utilization) to be a source of advantage on which the market places a premium in valuations – *capitalized as a sustainable advantage*.

Figure 12 illustrates the Valuation/Performance Matrix applied to the Global OE Industry. Again, Honda deserves special notice as the OE to generally dominate the top-right quadrant – both a performance *and* valuation premium. Surprisingly, Toyota does not perform as well as Honda, but it does enjoy a more attractive valuation. Tiny Suzuki performs surprisingly well, unlike Mitsubishi, Nissan or Hyundai. At year-end 1999, Ford (along with Porsche, not shown) was closest to joining the elite ranks of Honda, though this was before FY2000 troubles.

Honda dominates the premium performance, premium valuation quadrant ...

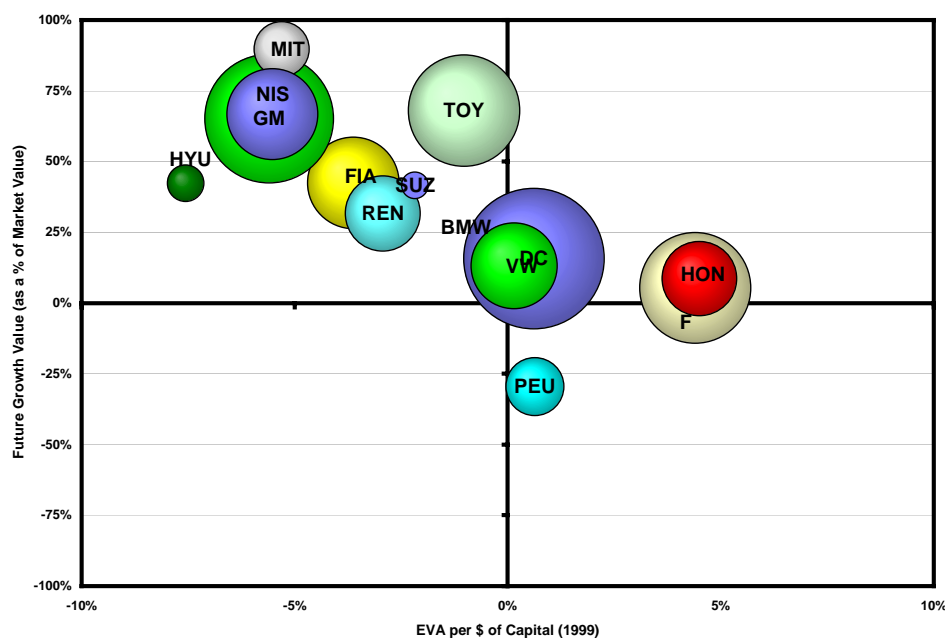


Figure 12. Valuation/Performance Matrix: Honda Stands Apart

**OE WORLD REVIEW: BEST OF TIMES, WORST OF TIMES**

Of course, these troubles and the earnings disappointments and share price declines of other companies during FY2000 are not captured here – DCX, Ford and others have likely shifted considerably to the left, and possibly downward. They may be the most likely candidates to have joined the poor performing, poorly valued, lower-left quadrant (“Turnarounds”), which was empty at year-end though Peugeot was close.

In some cases, poor performers may be protected by an alternative break-up value (GM), bailout value (Hyundai), or take-over value (Mitsubishi, Nissan). Renault and Fiat are working from low baselines, and might be reasonably expected to have considerable “upside” embedded in their valuations. In each of these cases, the poorly performing company is forced up into the problematic upper-left quadrant (“Expensive”) with poor financial performance, but a significant value-based requirement for improvement on a going-concern basis.

In the lower-right quadrant (“Bargains”), Peugeot and VW have achieved excellent financial performance in 1999 (as well as 1998) – earning more than their cost of capital and achieving positive EVA. Yet both face weak valuations, with Peugeot’s value actually implying negative expectations. Why? Several potential contributing factors are common to both – the stigma of many years of prior poor performance, an emerging working capital problem, a general decline in capital utilization causing lower EVA margins – all compounded by declining revenue from 1998. Problems with both working capital and revenue typically signal fundamental problems. These issues were particularly severe for Peugeot, where a cost reclassification between direct and overhead costs also muddied the waters. VW’s working capital and revenue problems were not as severe, but it faces a more general malaise on overall capital efficiency.

IN CLOSING

We recast all data to an economic basis to benchmark performance and valuation ...

Unable to earn a return in excess of the cost of capital over most of the business cycle, the automotive industry creates little wealth, measured by the excess enterprise value over book value. Exceptions do exist, however, with Honda as the most striking example – strong performance coupled with further expectations for growth.

... OE valuation is dominated by mean-reversion expectations ...

Automotive valuations are consistent with a cyclical industry. The overriding expectation is one of performance *mean-reversion*, with significant improvement in performance expected from the poorest performers and very little growth expected from the best. As a result, higher net profit margins do *not* support higher valuations, instead high net profits can signal a failure to invest in the long-term health of the firm. However, *gross margins do* tend to support premium valuations – their performance ‘boost’ is fully capitalized into values – as a more *sustainable source of competitive advantage*.

Overhead (SG&A) is part of the difference between gross and net margins, and can even be inversely correlated with performance – though not necessarily a causal relationship – high performers can *afford* to spend *more* on organizational capabilities, internal processes, etc. However, while overhead costs are not a statistically significant drag on current performance, they are correlated with valuation discounts – perhaps as a market signal of poor control.

... gross margins, R&D and capital utilization each contribute to premium values.

Investors clearly view R&D as an investment, and one that is highly valued, boosting market expectations for future performance. As a portion of the difference between gross and net margins, R&D does not have a significant impact on current performance *and* is highly correlated with valuation *premiums* in the industry. Asset utilization is also a source of advantage on which the market places a premium in valuations – *capitalized as a sustainable advantage*.

The “New Economy” makes operational excellence a strategic imperative. Benefits from e-auctions and capital off-loading will prove unsustainable unless the supply chain is fundamentally leaned. Yet despite 20 years of initiatives: lean manufacturing, theory of constraints, pull systems, SPC, TQM, and now Six Sigma, “The Goal” remains elusive - success is difficult to sustain and replicate on a global corporate scale.



APPENDIX A: WHAT IS EVA?

“There is no profit unless you earn the cost of capital.” Peter Drucker.

EVA measures profit less the cost of all capital employed EVA measures profit after the cost of all capital employed.⁵ It is the one measure that properly accounts for the trade-offs between the income statement and balance sheet in creating value. EVA is also the spread between a company’s return on and cost of capital, times invested capital:

$$\text{EVA} = (\text{Rate of Return} - \text{Cost of Capital}) \times \text{Capital}$$

For example, a \$1000 investment in a hot-dog stand produces a 5% return, where investments of similar risk elsewhere can earn 15%. The EVA from this case would be:

$$\text{EVA} = (5\% - 15\%) \times \$1000 = -\$100$$

Another way to think of EVA comes from multiplying through by capital:

$$\text{EVA} = \text{Operating Profit} - \text{A Capital Charge}$$

where,

$$\text{Capital Charge} = \text{Cost of Capital} \times \text{Capital}$$

For example, although the accounting profit in this example is \$50, there was an opportunity to earn \$150:

$$\text{EVA} = \$50 - \$150 = -\$100$$

EVA simultaneously captures both profit and capital efficiency Under EVA, a business is effectively charged by investors for the use of capital through a “line of credit” that bears interest at a rate equal to the cost of capital - shareowner accountability can thus be effectively decentralized into the operating units. EVA simultaneously focuses on both the profit and loss statement and the balance sheet and can be tailored to remedy accounting anomalies that fail to reflect economic value. Finally, EVA sets a required rate of return – the cost of capital – as a hurdle rate below which performance is unacceptable.

Although in any given business there are countless individual operating actions that can create value, eventually they must all fall into one of four categories measured by an increase in EVA.

Specifically, EVA can be increased through the following four means:

1. **Fix.** Improve the returns on existing capital through higher prices or margins, more volume, or lower costs.
2. **Harvest.** Through rationalizing, liquidating, or curtailing investments in operations that cannot generate returns greater than the cost of capital. This might be through divestitures or through withdrawing from unprofitable markets.
3. **Grow.** Profitable growth through investing capital where increased profits will cover the cost of additional capital. Investments in working capital and production capacity may be required to facilitate increased sales, new products or new markets.
4. **Optimize Cost of Capital.** Through reducing the cost of capital but maintaining the financial flexibility necessary to support the business strategy through the prudent use of debt, risk management, and other financial products.

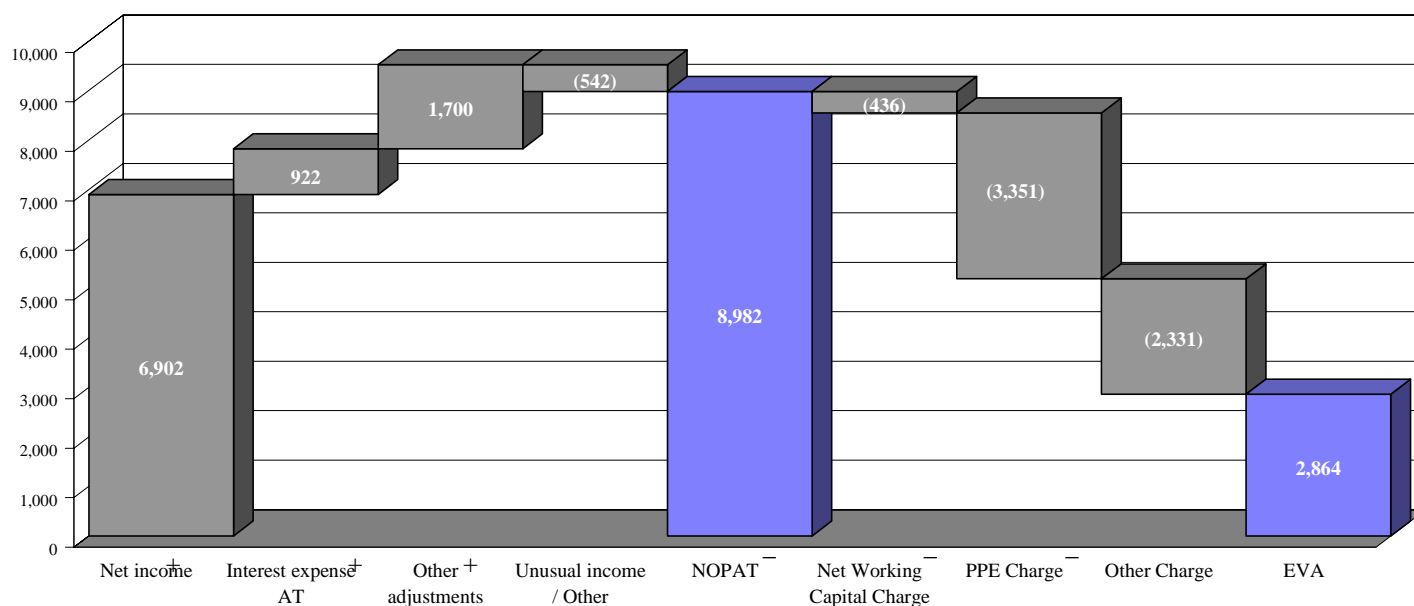
EVA is not just a performance measure – it is an integrated performance measurement, management and reward system

EVA Companies measure, report, and reward performance on the basis of EVA and use EVA to evaluate, execute and communicate strategies, investments, plans, tactics and decision.

⁵ The EVA framework is presented in more detail in the book, *The Quest for Value*, Harper Collins, 1991 by Bennett Stewart. EVA[®] is a registered trademark of Stern Stewart & Co.



APPENDIX B: EVA for Ford



← NOPAT →

← Capital Charge →

NOPAT	
Net income	\$6,902
+ Interest expense AT	922
+ Other adjustments	1,700
+ Unusual income / Other	(542)
= NOPAT	\$8,982

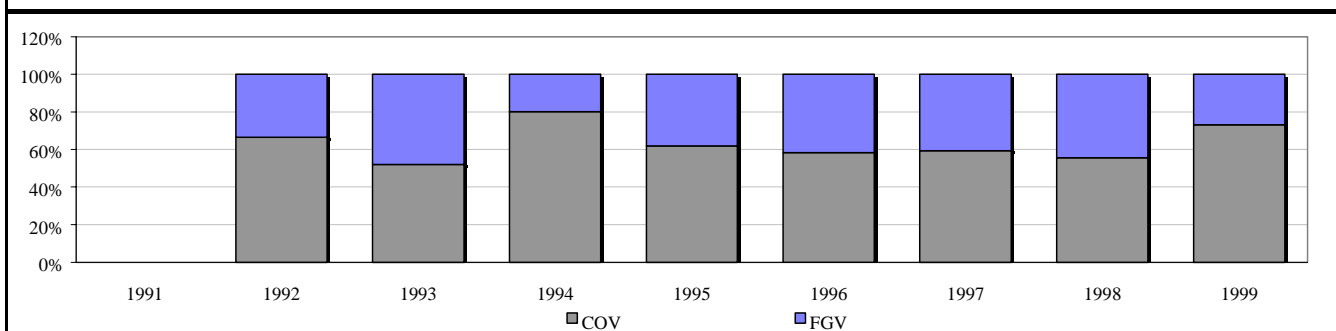
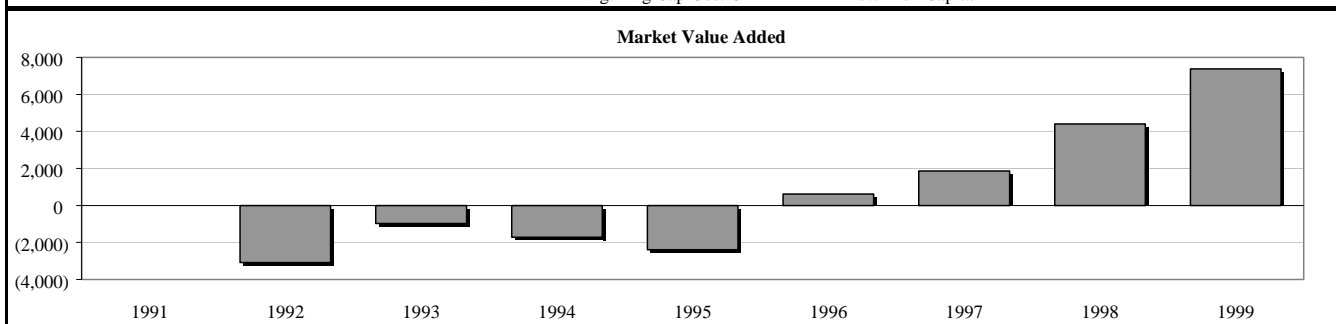
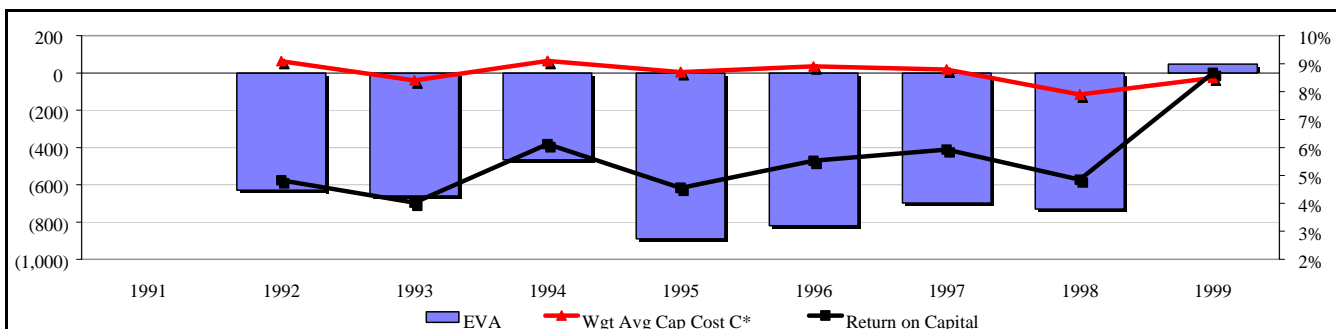
Capital Charge @ 9.4%	
Net Working Capital Charge	\$436
+ PPE Charge	3,351
+ Other Charge	2,331
= Capital Charge	\$6,118
= EVA	\$2,864



WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

BMW - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	-	\$19,269	\$16,687	\$27,187	\$32,093	\$33,904	\$33,436	\$37,653	\$32,465
Cost of Goods Sold	-	99.3%	101.1%	100.7%	100.1%	99.9%	98.6%	99.5%	98.7%
Gross Margin	-	0.7%	(1.1%)	(0.7%)	(0.1%)	0.1%	1.4%	0.5%	1.3%
- SG&A	-	0.8%	0.8%	0.7%	0.7%	0.7%	0.6%	0.4%	0.2%
+ Other Income	-	7.5%	8.3%	8.0%	7.4%	7.4%	7.2%	7.0%	9.7%
= NOPBT	-	7.4%	6.3%	6.5%	6.6%	6.8%	8.0%	7.2%	10.8%
- EVA Taxes	-	3.8%	2.7%	3.0%	3.5%	2.8%	3.7%	4.1%	3.3%
= NOPAT Margin	-	3.7%	3.6%	3.5%	3.0%	4.0%	4.3%	3.1%	7.5%
=> NOPAT - \$	-	\$711	\$606	\$958	\$977	\$1,341	\$1,443	\$1,163	\$2,438
NWC / Sales	-	55.8%	67.6%	43.8%	45.4%	49.9%	50.0%	44.6%	63.8%
+ Net PP&E	-	21.4%	22.4%	13.1%	20.0%	20.4%	21.1%	17.7%	21.7%
+ Other Assets	-	(0.7%)	0.4%	0.7%	1.5%	1.3%	1.7%	1.3%	1.2%
= Total Capital	-	76.5%	90.3%	57.6%	66.9%	71.6%	72.9%	63.7%	86.7%
=> Total Capital - \$	-	\$14,748	\$15,076	\$15,658	\$21,481	\$24,290	\$24,364	\$23,983	\$28,144
Wgt Avg Cap Cost C*	-	9.1%	8.4%	9.1%	8.7%	8.9%	8.8%	7.9%	8.5%
Capital Charge / Sales	-	7.0%	7.6%	5.2%	5.8%	6.4%	6.4%	5.0%	7.4%
Capital Charge - \$	-	\$1,341	\$1,267	\$1,424	\$1,869	\$2,161	\$2,141	\$1,893	\$2,391
EVA Margin	-	(3.3%)	(4.0%)	(1.7%)	(2.8%)	(2.4%)	(2.1%)	(1.9%)	0.1%
x Net Revenue	-	\$19,269	\$16,687	\$27,187	\$32,093	\$33,904	\$33,436	\$37,653	\$32,465
=> EVA	-	(\$630)	(\$661)	(\$466)	(\$891)	(\$820)	(\$698)	(\$730)	\$48

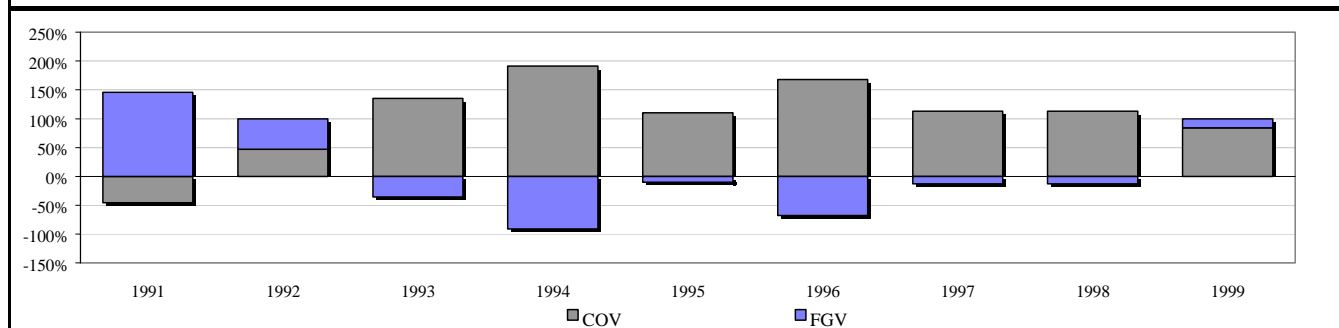
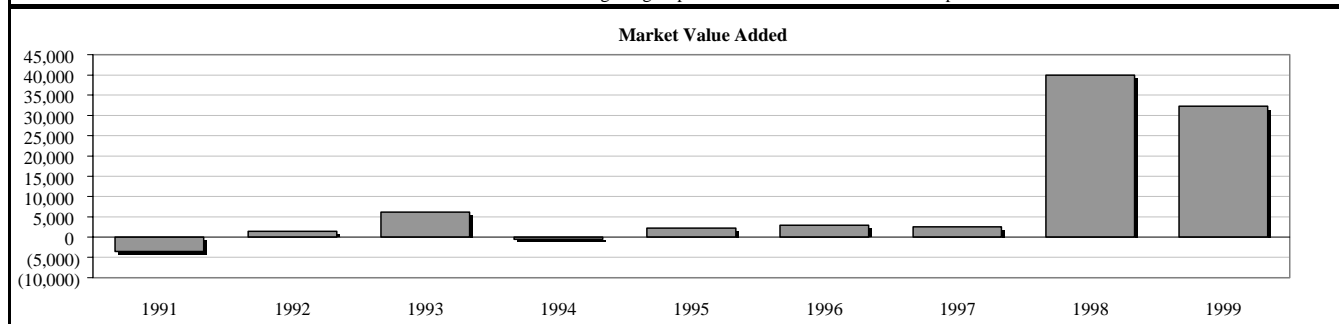
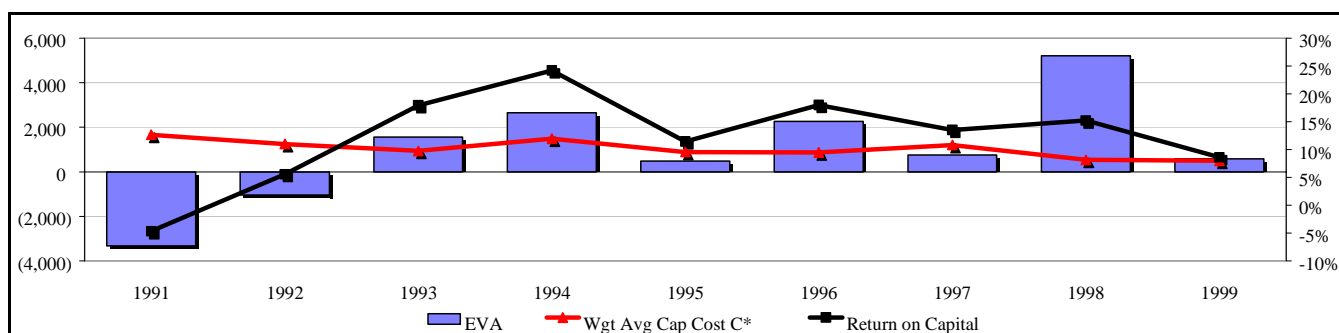




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Daimler - Chrysler - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales - \$	\$26,707	\$33,409	\$41,247	\$49,534	\$49,747	\$58,004	\$56,967	\$153,716	\$151,035
Cost of Goods Sold	94.8%	87.1%	81.4%	82.5%	87.5%	84.2%	86.1%	78.7%	78.8%
Gross Margin	5.2%	12.9%	18.6%	17.5%	12.5%	15.8%	13.9%	21.3%	21.2%
- SG&A	7.1%	6.8%	7.0%	3.7%	4.0%	4.1%	4.3%	12.3%	11.7%
+ Other Income	(1.8%)	(1.9%)	(1.8%)	(0.8%)	0.2%	0.3%	0.2%	0.3%	(2.6%)
= NOPBT	(3.7%)	4.2%	9.8%	12.9%	8.7%	12.0%	9.8%	9.3%	6.9%
- EVA Taxes	(0.3%)	1.0%	1.5%	2.4%	2.8%	3.7%	3.1%	2.0%	1.4%
= NOPAT Margin	(3.4%)	3.2%	8.3%	10.6%	5.9%	8.3%	6.7%	7.3%	5.5%
=> NOPAT - \$	(\$900)	\$1,068	\$3,420	\$5,238	\$2,920	\$4,790	\$3,791	\$11,210	\$8,250
NWC / Sales	(1.2%)	(6.5%)	(4.9%)	(4.1%)	(1.5%)	(3.4%)	(5.1%)	33.3%	39.5%
+ Net PP&E	35.2%	31.7%	28.3%	26.1%	29.6%	27.5%	32.3%	24.5%	30.3%
+ Other Assets	37.9%	32.2%	22.9%	21.7%	23.2%	21.8%	22.0%	(9.9%)	(6.3%)
= Total Capital	71.9%	57.4%	46.2%	43.7%	51.3%	45.9%	49.2%	47.9%	63.5%
=> Total Capital - \$	\$19,201	\$19,161	\$19,064	\$21,641	\$25,503	\$26,604	\$28,020	\$73,659	\$95,878
Wgt Avg Cap Cost C*	12.7%	11.0%	9.8%	11.9%	9.5%	9.5%	10.8%	8.1%	8.0%
Capital Charge / Sales	9.1%	6.3%	4.5%	5.2%	4.9%	4.3%	5.3%	3.9%	5.1%
Capital Charge - \$	\$2,432	\$2,106	\$1,860	\$2,585	\$2,432	\$2,519	\$3,032	\$6,000	\$7,661
EVA Margin	(12.5%)	(3.1%)	3.8%	5.4%	1.0%	3.9%	1.3%	3.4%	0.4%
x Net Revenue	\$26,707	\$33,409	\$41,247	\$49,534	\$49,747	\$58,004	\$56,967	\$153,716	\$151,035
=> EVA	(\$3,332)	(\$1,038)	\$1,560	\$2,653	\$488	\$2,271	\$759	\$5,210	\$588



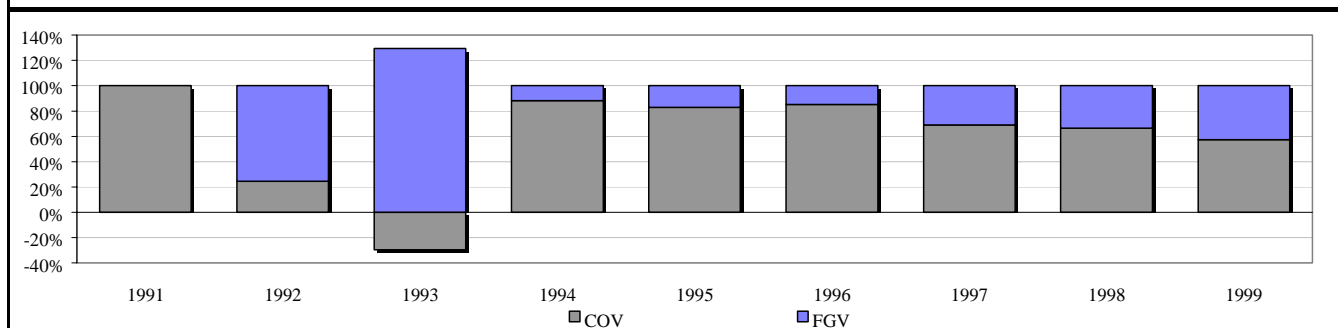
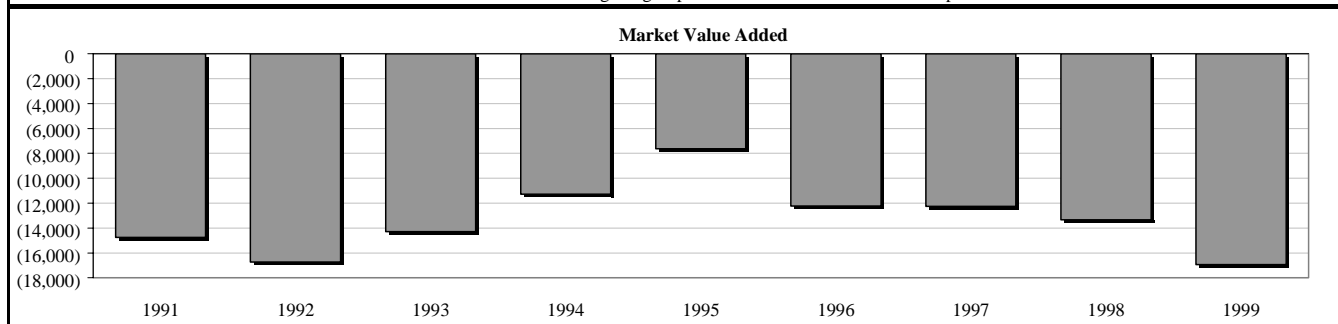
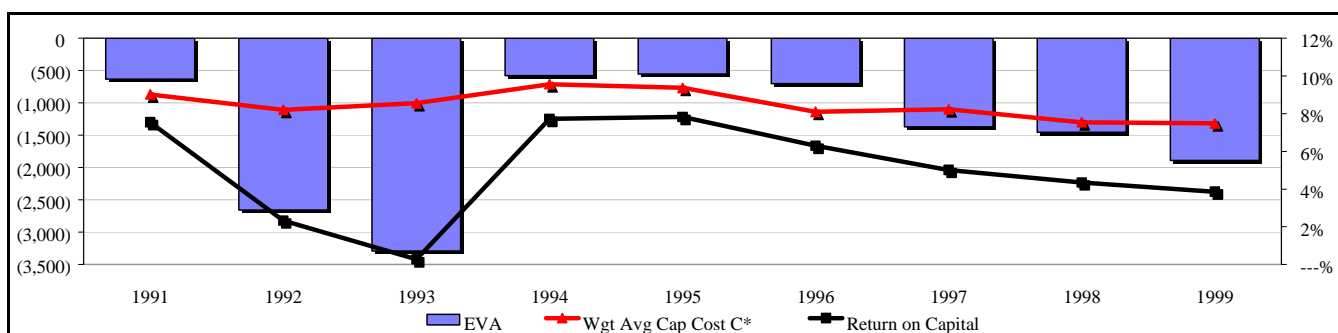
Note: Chrysler results presented before 1998.



WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Fiat - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	\$49,551	\$40,015	\$30,283	\$40,234	\$47,094	\$51,029	\$50,549	\$53,370	\$48,601
Cost of Goods Sold	93.9%	95.4%	94.5%	90.4%	90.3%	92.3%	93.0%	95.1%	96.2%
Gross Margin	6.1%	4.6%	5.5%	9.6%	9.7%	7.7%	7.0%	4.9%	3.8%
- SG&A	0.4%	0.5%	2.8%	2.6%	2.5%	2.5%	0.6%	0.5%	2.6%
+ Other Income	4.1%	2.1%	1.2%	1.9%	1.2%	1.5%	0.1%	1.6%	4.9%
= NOPBT	9.8%	6.2%	3.9%	9.0%	8.4%	6.7%	6.5%	6.0%	6.2%
- EVA Taxes	3.2%	3.6%	3.5%	3.0%	2.5%	1.8%	2.3%	2.3%	2.0%
= NOPAT Margin	6.6%	2.6%	0.3%	6.0%	6.0%	4.8%	4.2%	3.7%	4.1%
=> NOPAT - \$	\$3,260	\$1,053	\$106	\$2,405	\$2,823	\$2,461	\$2,134	\$1,975	\$2,008
NWC / Sales	42.9%	47.8%	59.1%	31.9%	30.5%	31.8%	36.7%	40.3%	52.2%
+ Net PP&E	28.7%	40.8%	42.4%	35.7%	37.8%	34.1%	36.2%	30.3%	33.3%
+ Other Assets	15.6%	24.4%	29.5%	9.9%	8.3%	10.6%	11.4%	14.5%	21.6%
= Total Capital	87.2%	113.0%	131.1%	77.4%	76.6%	76.5%	84.3%	85.2%	107.1%
=> Total Capital - \$	\$43,186	\$45,224	\$39,695	\$31,156	\$36,068	\$39,054	\$42,615	\$45,455	\$52,041
Wgt Avg Cap Cost C*	9.0%	8.2%	8.6%	9.6%	9.4%	8.1%	8.2%	7.5%	7.5%
Capital Charge / Sales	7.9%	9.3%	11.2%	7.4%	7.2%	6.2%	6.9%	6.4%	8.0%
Capital Charge - \$	\$3,893	\$3,711	\$3,398	\$2,981	\$3,377	\$3,164	\$3,505	\$3,431	\$3,896
EVA Margin	(1.3%)	(6.6%)	(10.9%)	(1.4%)	(1.2%)	(1.4%)	(2.7%)	(2.7%)	(3.9%)
x Net Revenue	\$49,551	\$40,015	\$30,283	\$40,234	\$47,094	\$51,029	\$50,549	\$53,370	\$48,601
=> EVA	(\$633)	(\$2,658)	(\$3,292)	(\$576)	(\$554)	(\$703)	(\$1,371)	(\$1,456)	(\$1,888)

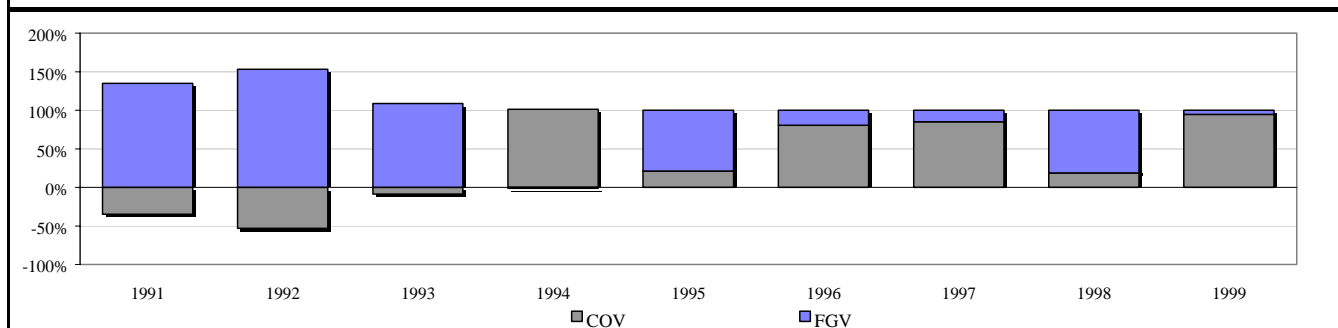
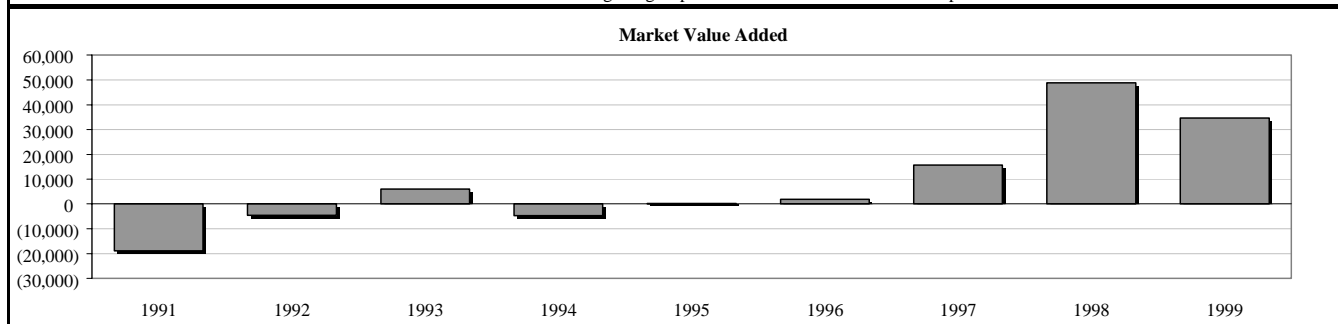
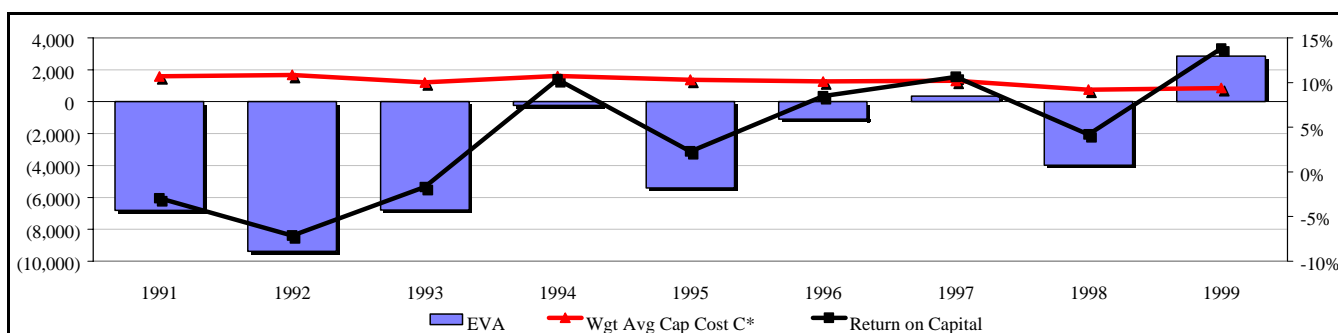




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Ford - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales - \$	\$72,051	\$84,407	\$91,495	\$107,137	\$110,496	\$118,023	\$122,935	\$119,083	\$136,973
Cost of Goods Sold	99.9%	96.8%	92.8%	84.7%	85.7%	86.1%	83.8%	88.3%	81.7%
Gross Margin	0.1%	3.2%	7.2%	15.3%	14.3%	13.9%	16.2%	11.7%	18.3%
- SG&A	0.1%	5.3%	5.4%	5.1%	5.5%	5.6%	6.5%	7.1%	7.0%
+ Other Income	(2.4%)	(1.8%)	(1.1%)	(1.0%)	(5.3%)	(1.5%)	(0.4%)	(4.1%)	(1.9%)
= NOPBT	(2.5%)	(3.9%)	0.6%	9.2%	3.6%	6.8%	9.3%	0.4%	9.4%
- EVA Taxes	(0.4%)	0.5%	1.7%	3.2%	2.2%	2.0%	3.1%	(2.4%)	2.8%
= NOPAT Margin	(2.1%)	(4.4%)	(1.1%)	6.0%	1.4%	4.8%	6.2%	2.8%	6.6%
=> NOPAT - \$	(\$1,480)	(\$3,725)	(\$992)	\$6,411	\$1,545	\$5,705	\$7,668	\$3,325	\$8,982
NWC / Sales	2.3%	3.6%	2.5%	(0.2%)	0.8%	(0.5%)	(0.0%)	4.1%	3.5%
+ Net PP&E	30.8%	27.9%	25.6%	21.8%	24.7%	26.8%	27.1%	28.1%	26.0%
+ Other Assets	36.2%	30.4%	35.4%	36.1%	35.5%	30.6%	31.4%	34.5%	18.0%
= Total Capital	69.3%	61.8%	63.4%	57.7%	61.1%	57.0%	58.6%	66.7%	47.5%
=> Total Capital - \$	\$49,911	\$52,146	\$58,052	\$61,853	\$67,473	\$67,276	\$71,979	\$79,406	\$65,085
Wgt Avg Cap Cost C*	10.7%	10.9%	10.0%	10.7%	10.3%	10.1%	10.2%	9.2%	9.4%
Capital Charge / Sales	7.4%	6.7%	6.4%	6.2%	6.3%	5.8%	6.0%	6.1%	4.5%
Capital Charge - \$	\$5,340	\$5,662	\$5,813	\$6,641	\$6,957	\$6,806	\$7,327	\$7,306	\$6,118
EVA Margin	(9.5%)	(11.1%)	(7.4%)	(0.2%)	(4.9%)	(0.9%)	0.3%	(3.3%)	2.1%
x Net Revenue	\$72,051	\$84,407	\$91,495	\$107,137	\$110,496	\$118,023	\$122,935	\$119,083	\$136,973
=> EVA	(\$6,821)	(\$9,386)	(\$6,805)	(\$230)	(\$5,412)	(\$1,102)	\$341	(\$3,980)	\$2,864



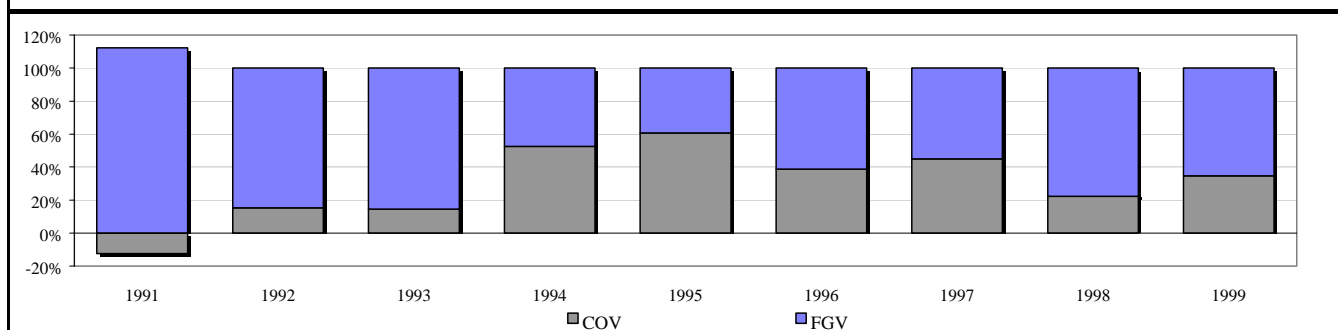
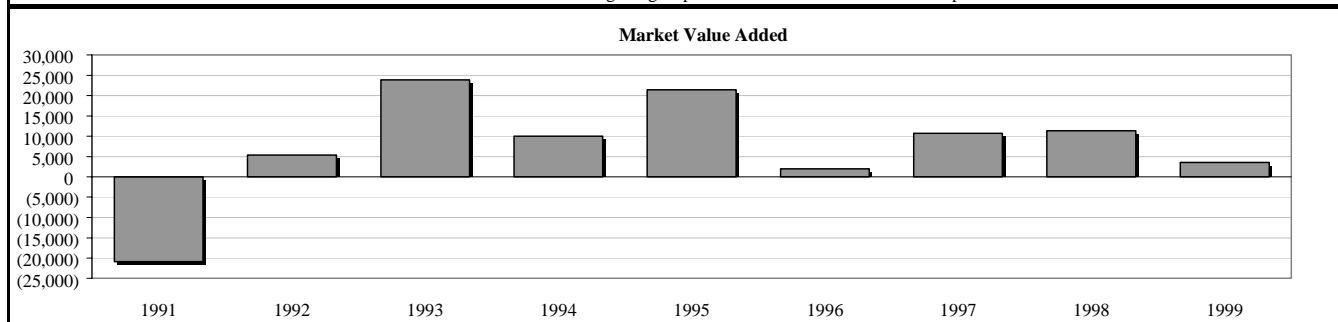
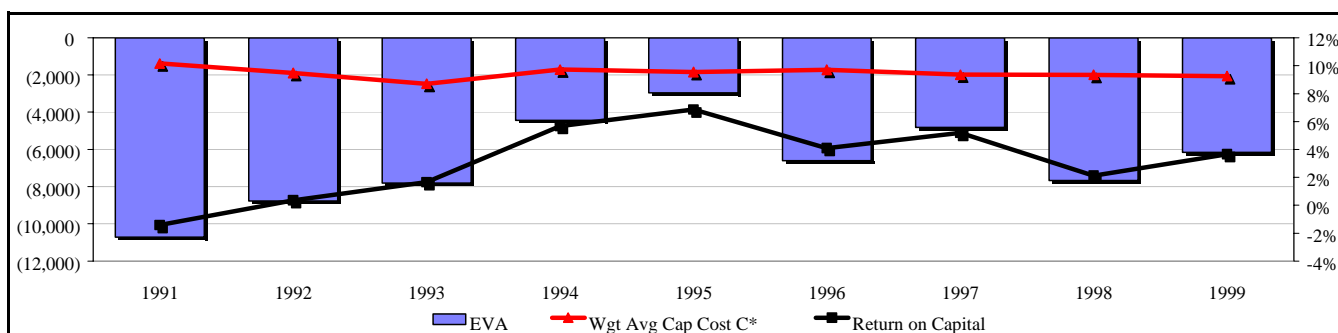
Note: Financing subsidiary treated accounted for using the equity method.



WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

General Motors - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales - \$	\$109,156	\$118,572	\$125,252	\$141,576	\$152,614	\$145,427	\$153,781	\$140,433	\$152,635
Cost of Goods Sold	94.6%	92.1%	89.9%	87.6%	87.8%	90.2%	88.1%	89.2%	87.4%
Gross Margin	5.4%	7.9%	10.1%	12.4%	12.2%	9.8%	11.9%	10.8%	12.6%
- SG&A	3.1%	3.5%	3.1%	2.6%	2.1%	2.1%	3.3%	3.7%	5.0%
+ Other Income	(3.6%)	(4.3%)	(6.4%)	(3.5%)	(3.8%)	(3.9%)	(3.4%)	(5.1%)	(3.9%)
= NOPBT	(1.3%)	0.0%	0.6%	6.2%	6.2%	3.9%	5.2%	2.0%	3.8%
- EVA Taxes	(0.1%)	(0.3%)	(0.9%)	1.8%	1.3%	0.6%	1.3%	0.4%	1.1%
= NOPAT Margin	(1.2%)	0.3%	1.5%	4.4%	5.0%	3.3%	3.9%	1.6%	2.6%
=> NOPAT - \$	(\$1,317)	\$336	\$1,822	\$6,215	\$7,561	\$4,810	\$5,959	\$2,253	\$4,025
NWC / Sales	14.0%	11.5%	10.5%	3.4%	1.4%	3.6%	2.0%	(1.6%)	(1.0%)
+ Net PP&E	32.6%	30.8%	28.4%	24.7%	22.6%	25.7%	23.4%	22.0%	23.1%
+ Other Assets	38.3%	38.6%	49.4%	49.1%	48.3%	51.6%	49.4%	55.1%	50.0%
= Total Capital	84.8%	80.9%	88.3%	77.3%	72.3%	80.8%	74.8%	75.5%	72.1%
=> Total Capital - \$	\$92,528	\$95,943	\$110,559	\$109,402	\$110,272	\$117,501	\$115,028	\$106,061	\$109,995
Wgt Avg Cap Cost C*	10.2%	9.5%	8.7%	9.7%	9.5%	9.7%	9.4%	9.4%	9.3%
Capital Charge / Sales	8.6%	7.7%	7.7%	7.5%	6.9%	7.8%	7.0%	7.1%	6.7%
Capital Charge - \$	\$9,403	\$9,101	\$9,629	\$10,645	\$10,524	\$11,403	\$10,766	\$9,922	\$10,186
EVA Margin	(9.8%)	(7.4%)	(6.2%)	(3.1%)	(1.9%)	(4.5%)	(3.1%)	(5.5%)	(4.0%)
x Net Revenue	\$109,156	\$118,572	\$125,252	\$141,576	\$152,614	\$145,427	\$153,781	\$140,433	\$152,635
=> EVA	(\$10,719)	(\$8,765)	(\$7,807)	(\$4,430)	(\$2,963)	(\$6,593)	(\$4,807)	(\$7,669)	(\$6,160)



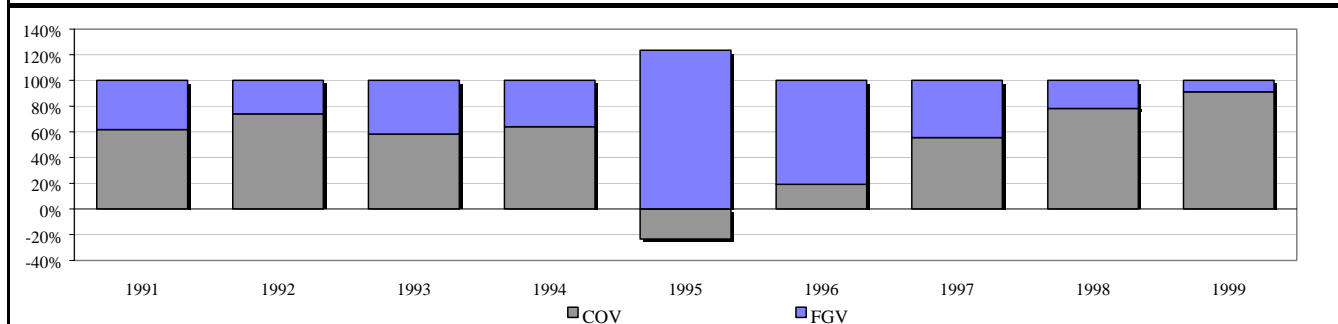
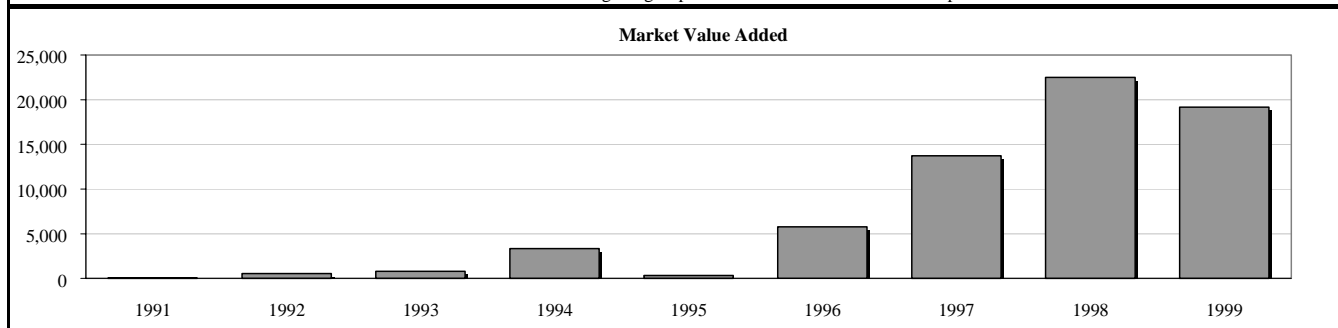
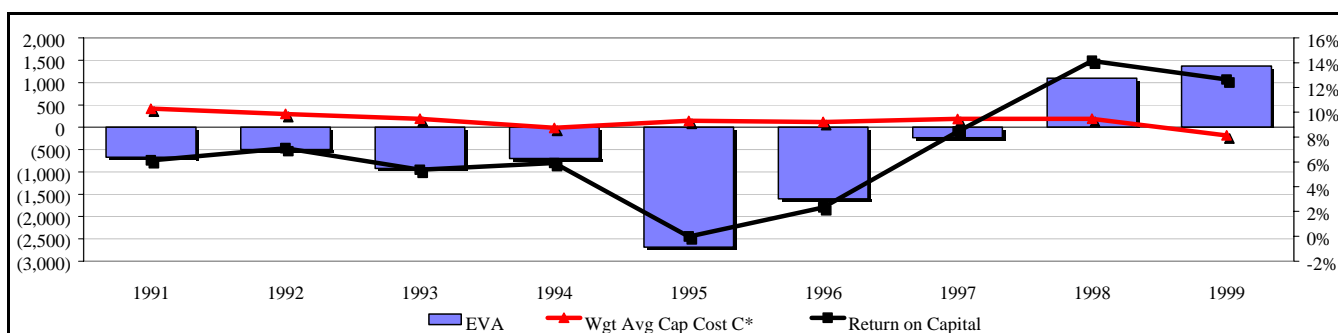
Note: Financing subsidiary accounted for using the equity method.



WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Honda - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	\$32,362	\$38,230	\$40,219	\$44,630	\$36,977	\$34,351	\$39,778	\$50,460	\$55,015
Cost of Goods Sold	72.9%	72.8%	72.3%	73.0%	72.8%	72.8%	69.9%	65.8%	65.8%
Gross Margin	27.1%	27.2%	27.7%	27.0%	27.2%	27.2%	30.1%	34.2%	34.2%
- SG&A	19.0%	19.3%	20.3%	20.0%	19.4%	18.7%	17.8%	21.8%	21.7%
+ Other Income	(2.8%)	(2.4%)	(2.8%)	(2.7%)	(6.5%)	(5.2%)	(3.4%)	(2.0%)	(2.6%)
= NOPBT	5.4%	5.5%	4.6%	4.2%	1.3%	3.3%	8.8%	10.4%	9.9%
- EVA Taxes	2.3%	2.2%	1.6%	1.0%	1.4%	1.7%	4.0%	3.8%	2.9%
= NOPAT Margin	3.1%	3.3%	3.0%	3.3%	(0.0%)	1.6%	4.9%	6.6%	7.0%
=> NOPAT - \$	\$989	\$1,271	\$1,205	\$1,465	(\$9)	\$540	\$1,940	\$3,331	\$3,852
NWC / Sales	17.7%	17.3%	23.1%	22.7%	33.2%	27.0%	25.9%	23.3%	28.7%
+ Net PP&E	22.4%	20.1%	22.4%	21.2%	27.9%	22.8%	17.8%	14.1%	16.2%
+ Other Assets	9.9%	9.5%	10.3%	11.6%	16.7%	17.9%	14.0%	9.2%	10.5%
= Total Capital	49.9%	46.9%	55.8%	55.5%	77.8%	67.6%	57.7%	46.7%	55.4%
=> Total Capital - \$	\$16,164	\$17,922	\$22,426	\$24,780	\$28,755	\$23,223	\$22,961	\$23,549	\$30,486
Wgt Avg Cap Cost C*	10.3%	9.9%	9.5%	8.7%	9.3%	9.2%	9.5%	9.5%	8.1%
Capital Charge / Sales	5.1%	4.6%	5.3%	4.8%	7.2%	6.2%	5.5%	4.4%	4.5%
Capital Charge - \$	\$1,662	\$1,768	\$2,125	\$2,165	\$2,678	\$2,142	\$2,174	\$2,230	\$2,480
EVA Margin	(2.1%)	(1.3%)	(2.3%)	(1.6%)	(7.3%)	(4.7%)	(0.6%)	2.2%	2.5%
x Net Revenue	\$32,362	\$38,230	\$40,219	\$44,630	\$36,977	\$34,351	\$39,778	\$50,460	\$55,015
=> EVA	(\$674)	(\$497)	(\$920)	(\$699)	(\$2,687)	(\$1,602)	(\$233)	\$1,100	\$1,372

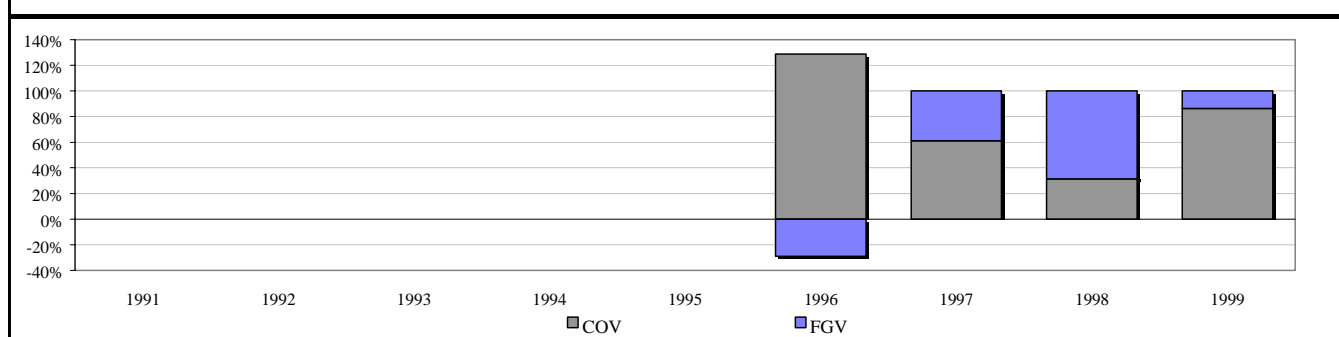
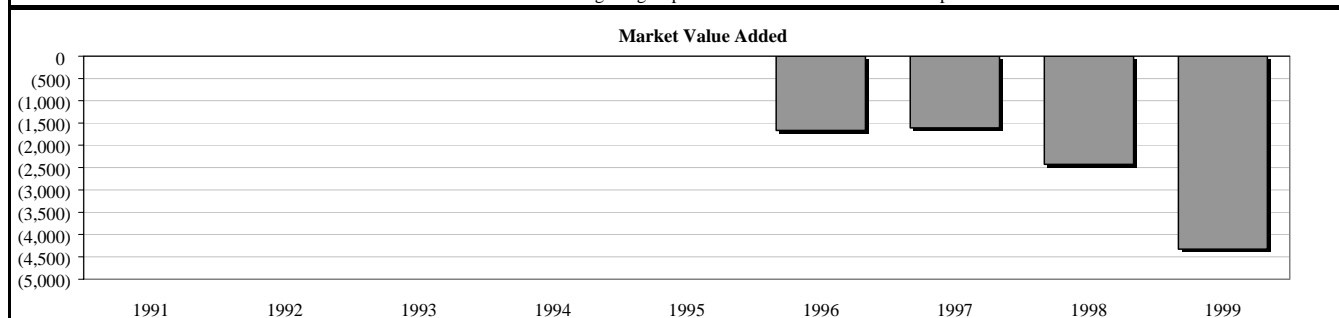
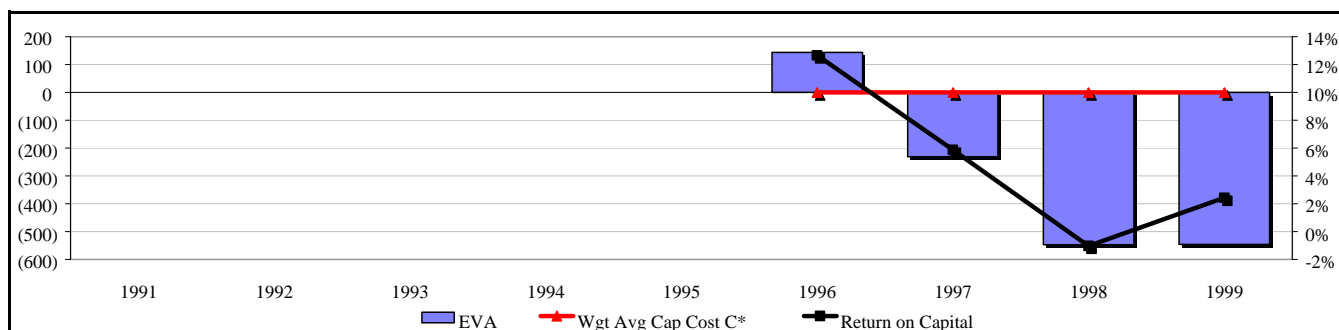




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Hyundai - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales - \$	-	-	-	-	-	\$13,610	\$8,241	\$7,202	\$12,001
Cost of Goods Sold	-	-	-	-	-	82.5%	79.2%	78.7%	82.1%
Gross Margin	-	-	-	-	-	17.5%	20.8%	21.3%	17.9%
- SG&A	-	-	-	-	-	10.3%	13.3%	18.4%	11.1%
+ Other Income	-	-	-	-	-	(1.3%)	(2.4%)	(3.2%)	(1.3%)
= NOPBT	-	-	-	-	-	6.0%	5.1%	(0.4%)	5.5%
- EVA Taxes	-	-	-	-	-	1.0%	1.1%	0.3%	4.1%
= NOPAT Margin	-	-	-	-	-	5.0%	4.0%	(0.7%)	1.5%
=> NOPAT - \$	-	-	-	-	-	\$685	\$329	(\$52)	\$176
NWC / Sales	-	-	-	-	-	4.4%	3.2%	9.0%	1.4%
+ Net PP&E	-	-	-	-	-	19.8%	33.5%	26.7%	38.9%
+ Other Assets	-	-	-	-	-	15.6%	31.3%	33.0%	19.9%
= Total Capital	-	-	-	-	-	39.7%	68.0%	68.8%	60.2%
=> Total Capital - \$	-	-	-	-	-	\$5,407	\$5,604	\$4,955	\$7,229
Wgt Avg Cap Cost C*	-	-	-	-	-	10.0%	10.0%	10.0%	10.0%
Capital Charge / Sales	-	-	-	-	-	4.0%	6.8%	6.9%	6.0%
Capital Charge - \$	-	-	-	-	-	\$541	\$560	\$495	\$723
EVA Margin	-	-	-	-	-	1.1%	(2.8%)	(7.6%)	(4.6%)
x Net Revenue	-	-	-	-	-	\$13,610	\$8,241	\$7,202	\$12,001
=> EVA	-	-	-	-	-	\$144	(\$231)	(\$547)	(\$547)

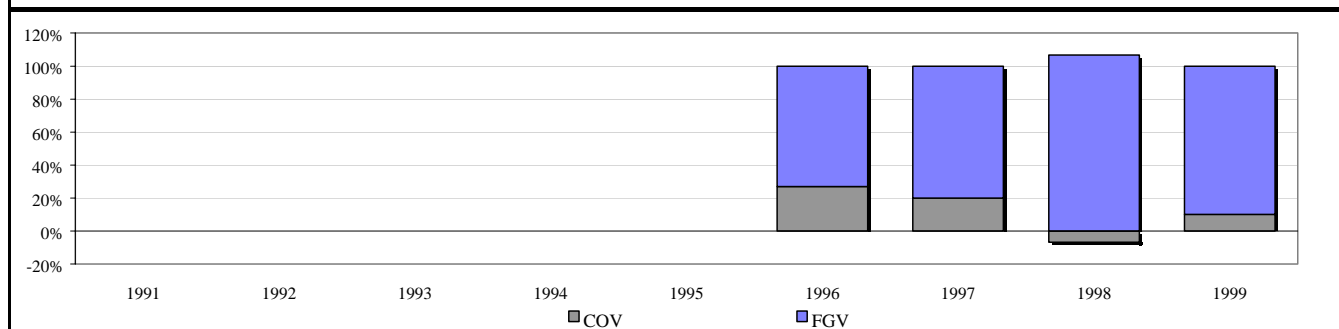
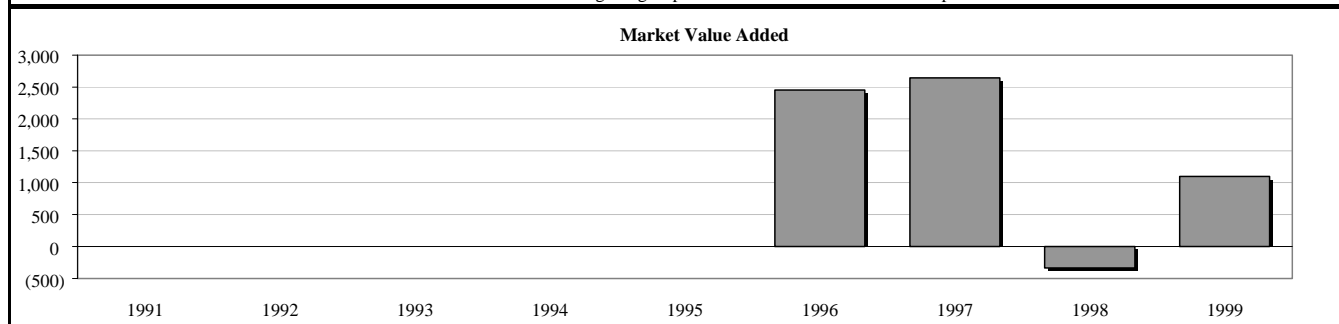
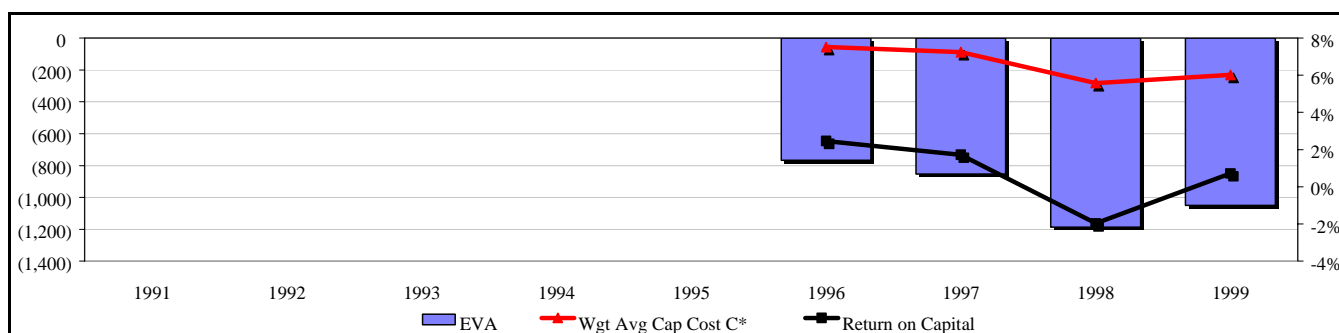




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Mitsubishi - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales - \$	-	-	-	-	-	\$28,574	\$27,601	\$31,441	\$27,411
Cost of Goods Sold	-	-	-	-	-	82.6%	81.5%	81.6%	80.9%
Gross Margin	-	-	-	-	-	17.4%	18.5%	18.4%	19.1%
- SG&A	-	-	-	-	-	15.2%	17.3%	18.4%	18.3%
+ Other Income	-	-	-	-	-	0.6%	1.2%	0.8%	0.4%
= NOPBT	-	-	-	-	-	2.7%	2.3%	0.7%	1.2%
- EVA Taxes	-	-	-	-	-	1.4%	1.3%	1.7%	0.7%
= NOPAT Margin	-	-	-	-	-	1.3%	1.0%	(1.0%)	0.5%
=> NOPAT - \$	-	-	-	-	-	\$376	\$265	(\$309)	\$142
NWC / Sales	-	-	-	-	-	14.6%	16.5%	14.0%	20.5%
+ Net PP&E	-	-	-	-	-	34.1%	32.9%	27.9%	41.4%
+ Other Assets	-	-	-	-	-	4.5%	6.4%	8.0%	10.4%
= Total Capital	-	-	-	-	-	53.2%	55.9%	49.9%	72.3%
=> Total Capital - \$	-	-	-	-	-	\$15,202	\$15,419	\$15,691	\$19,812
Wgt Avg Cap Cost C*	-	-	-	-	-	7.5%	7.3%	5.6%	6.0%
Capital Charge / Sales	-	-	-	-	-	4.0%	4.1%	2.8%	4.4%
Capital Charge - \$	-	-	-	-	-	\$1,143	\$1,118	\$876	\$1,193
EVA Margin	-	-	-	-	-	(2.7%)	(3.1%)	(3.8%)	(3.8%)
x Net Revenue	-	-	-	-	-	\$28,574	\$27,601	\$31,441	\$27,411
=> EVA	-	-	-	-	-	(\$767)	(\$853)	(\$1,185)	(\$1,051)

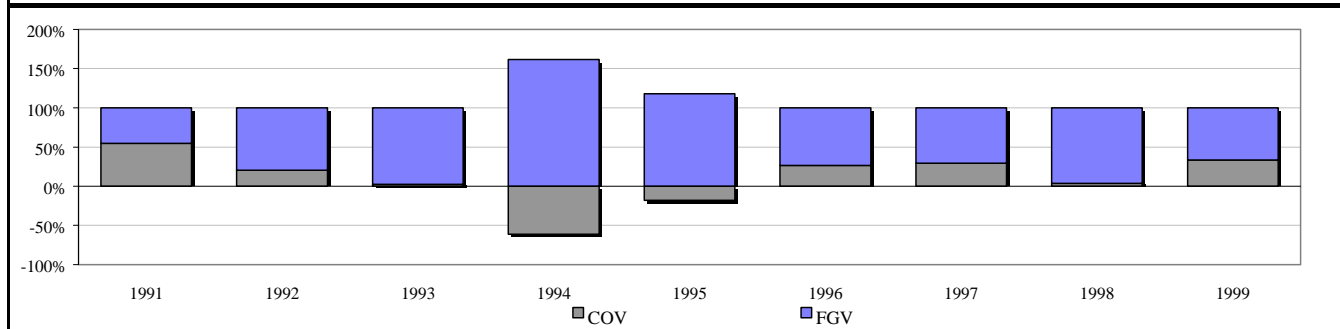
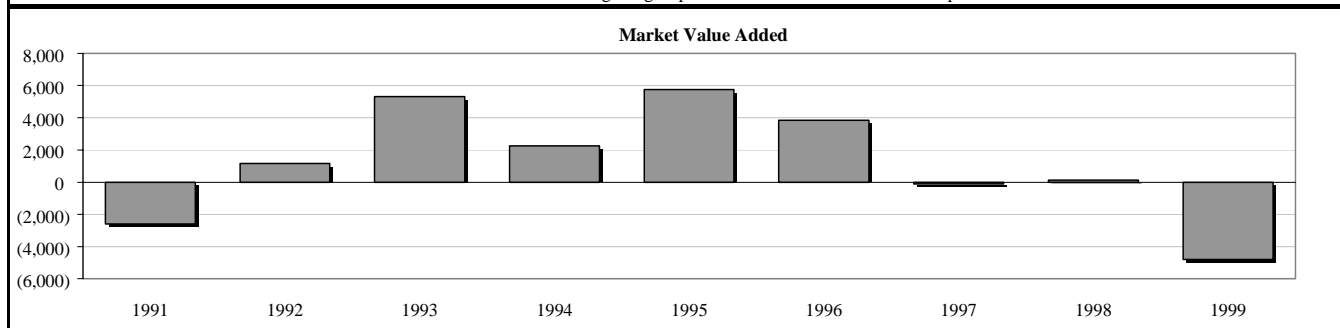
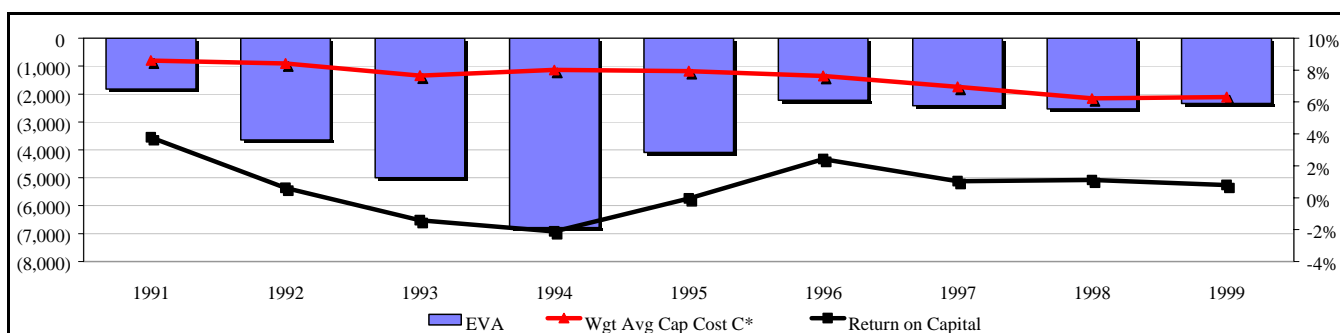




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Nissan - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	\$55,866	\$60,318	\$67,023	\$54,392	\$48,785	\$50,040	\$55,211	\$55,341	\$53,917
Cost of Goods Sold	78.3%	80.0%	81.8%	80.3%	78.3%	75.2%	74.3%	74.8%	72.4%
Gross Margin	21.7%	20.0%	18.2%	19.7%	21.7%	24.8%	25.7%	25.2%	27.6%
- SG&A	18.3%	20.1%	20.6%	21.6%	20.8%	21.7%	24.8%	23.7%	22.2%
+ Other Income	1.2%	1.9%	2.5%	0.5%	0.0%	0.2%	0.7%	0.5%	(4.2%)
= NOPBT	4.6%	1.8%	0.0%	(1.5%)	1.0%	3.3%	1.6%	1.9%	1.2%
- EVA Taxes	2.0%	1.3%	1.2%	1.1%	1.0%	1.2%	0.8%	0.9%	0.6%
= NOPAT Margin	2.5%	0.5%	(1.2%)	(2.6%)	(0.1%)	2.1%	0.8%	1.0%	0.6%
=> NOPAT - \$	\$1,421	\$290	(\$776)	(\$1,417)	(\$28)	\$1,037	\$428	\$546	\$333
NWC / Sales	29.7%	31.1%	29.6%	37.5%	25.4%	22.4%	17.7%	24.1%	19.8%
+ Net PP&E	25.7%	31.8%	37.7%	63.2%	61.5%	49.5%	45.9%	52.3%	47.3%
+ Other Assets	11.9%	14.7%	14.9%	22.6%	18.1%	13.6%	10.8%	13.0%	11.4%
= Total Capital	67.4%	77.6%	82.2%	123.4%	105.0%	85.5%	74.4%	89.4%	78.5%
=> Total Capital - \$	\$37,642	\$46,785	\$55,115	\$67,113	\$51,229	\$42,764	\$41,071	\$49,485	\$42,314
Wgt Avg Cap Cost C*	8.6%	8.4%	7.7%	8.0%	7.9%	7.6%	6.9%	6.2%	6.3%
Capital Charge / Sales	5.8%	6.5%	6.3%	9.9%	8.3%	6.5%	5.2%	5.6%	5.0%
Capital Charge - \$	\$3,240	\$3,940	\$4,217	\$5,377	\$4,067	\$3,262	\$2,854	\$3,083	\$2,670
EVA Margin	(3.3%)	(6.1%)	(7.5%)	(12.5%)	(8.4%)	(4.4%)	(4.4%)	(4.6%)	(4.3%)
x Net Revenue	\$55,866	\$60,318	\$67,023	\$54,392	\$48,785	\$50,040	\$55,211	\$55,341	\$53,917
=> EVA	(\$1,819)	(\$3,651)	(\$4,993)	(\$6,795)	(\$4,095)	(\$2,225)	(\$2,426)	(\$2,537)	(\$2,337)

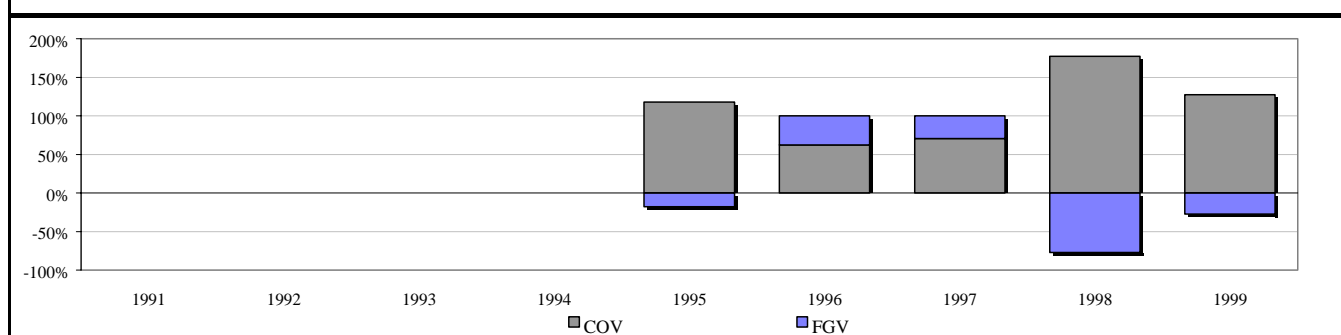
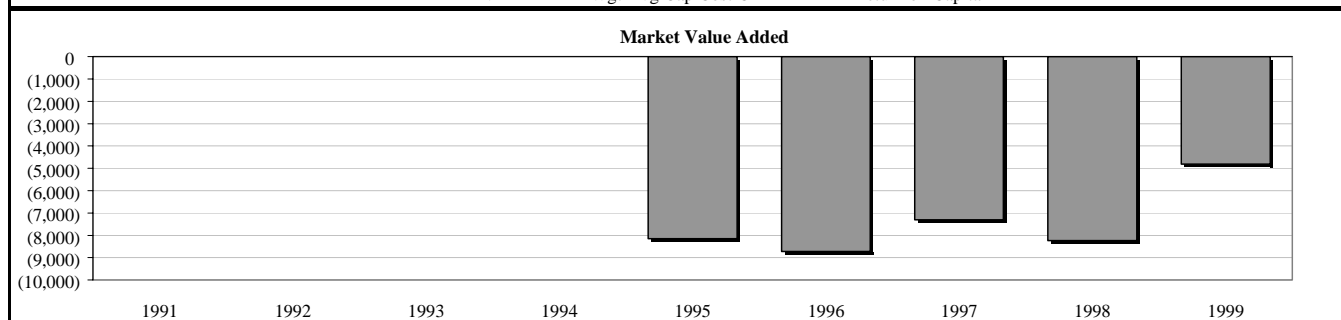
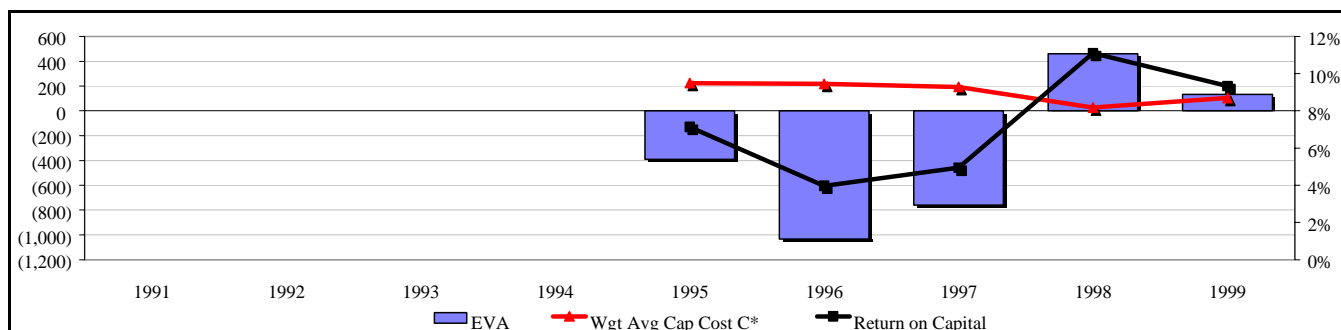




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Peugeot - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	-	-	-	-	\$33,612	\$33,437	\$31,174	\$39,372	\$37,574
Cost of Goods Sold	-	-	-	-	63.0%	64.5%	76.8%	75.4%	74.8%
Gross Margin	-	-	-	-	37.0%	35.5%	23.2%	24.6%	25.2%
- SG&A	-	-	-	-	30.7%	30.1%	18.1%	17.2%	16.2%
+ Other Income	-	-	-	-	(1.8%)	(2.2%)	(1.3%)	(1.9%)	(2.5%)
= NOPBT	-	-	-	-	4.4%	3.1%	3.7%	5.5%	6.6%
- EVA Taxes	-	-	-	-	0.9%	0.9%	0.9%	1.1%	1.4%
= NOPAT Margin	-	-	-	-	3.5%	2.2%	2.8%	4.5%	5.2%
=> NOPAT - \$	-	-	-	-	\$1,179	\$749	\$863	\$1,755	\$1,943
NWC / Sales	-	-	-	-	10.2%	15.0%	13.0%	25.1%	37.6%
+ Net PP&E	-	-	-	-	31.1%	33.8%	33.5%	22.3%	27.1%
+ Other Assets	-	-	-	-	7.8%	7.5%	9.5%	(7.3%)	(9.3%)
= Total Capital	-	-	-	-	49.1%	56.4%	56.0%	40.1%	55.4%
=> Total Capital - \$	-	-	-	-	\$16,512	\$18,851	\$17,455	\$15,797	\$20,820
Wgt Avg Cap Cost C*	-	-	-	-	9.5%	9.5%	9.3%	8.2%	8.7%
Capital Charge / Sales	-	-	-	-	4.7%	5.3%	5.2%	3.3%	4.8%
Capital Charge - \$	-	-	-	-	\$1,568	\$1,782	\$1,622	\$1,293	\$1,810
EVA Margin	-	-	-	-	(1.2%)	(3.1%)	(2.4%)	1.2%	0.4%
x Net Revenue	-	-	-	-	\$33,612	\$33,437	\$31,174	\$39,372	\$37,574
=> EVA	-	-	-	-	(\$389)	(\$1,033)	(\$759)	\$462	\$133

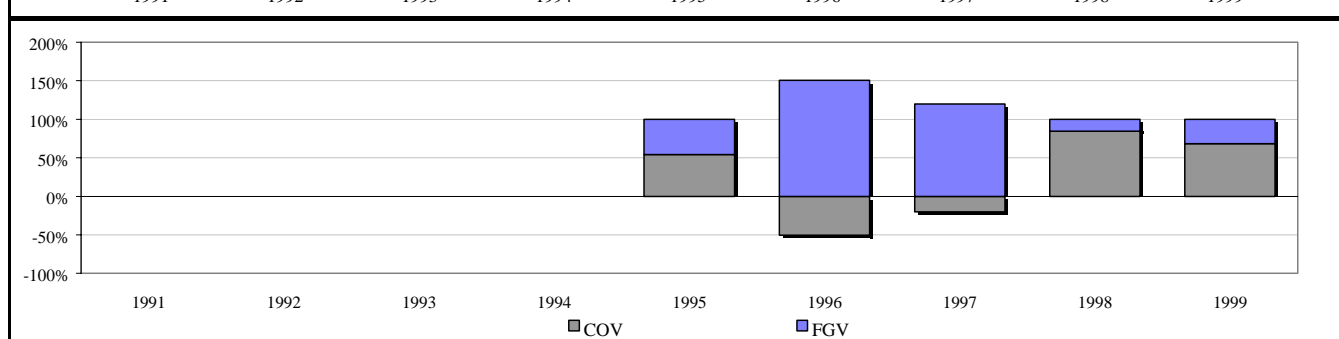
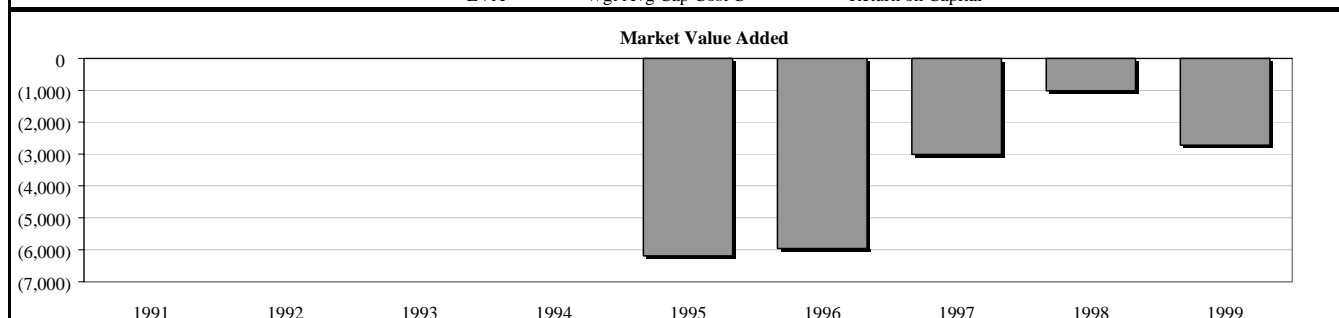
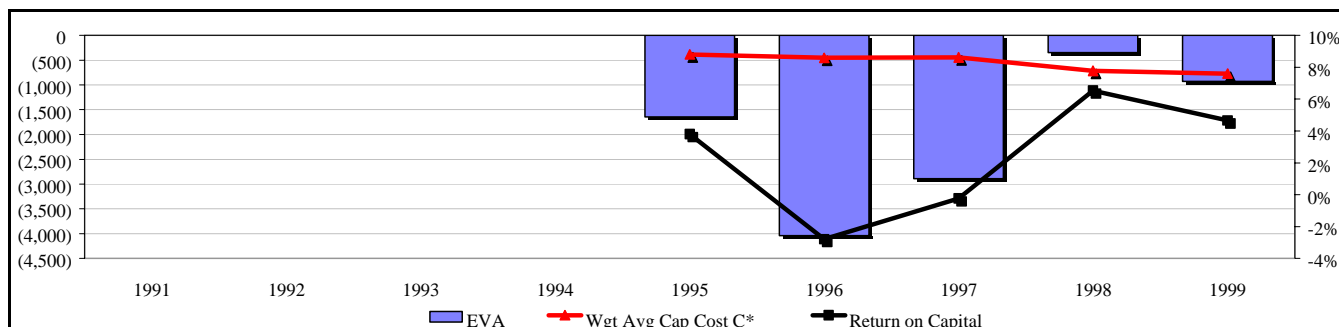




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Renault - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	-	-	-	-	\$35,769	\$33,920	\$33,386	\$41,978	\$40,701
Cost of Goods Sold	-	-	-	-	82.6%	83.5%	81.5%	79.2%	82.2%
Gross Margin	-	-	-	-	17.4%	16.5%	18.5%	20.8%	17.8%
- SG&A	-	-	-	-	13.5%	16.6%	14.2%	12.7%	12.4%
+ Other Income	-	-	-	-	0.4%	(1.9%)	(1.0%)	(1.8%)	(0.7%)
= NOPBT	-	-	-	-	4.4%	(2.0%)	3.4%	6.3%	4.8%
- EVA Taxes	-	-	-	-	0.9%	0.9%	3.6%	1.9%	1.2%
= NOPAT Margin	-	-	-	-	3.5%	(2.9%)	(0.2%)	4.4%	3.6%
=> NOPAT - \$	-	-	-	-	\$1,255	(\$991)	(\$77)	\$1,847	\$1,478
NWC / Sales	-	-	-	-	37.6%	48.4%	44.7%	46.3%	57.1%
+ Net PP&E	-	-	-	-	23.6%	29.2%	28.5%	21.9%	23.3%
+ Other Assets	-	-	-	-	31.0%	26.9%	24.6%	(0.9%)	(2.4%)
= Total Capital	-	-	-	-	92.2%	104.6%	97.8%	67.3%	78.0%
=> Total Capital - \$	-	-	-	-	\$32,970	\$35,471	\$32,640	\$28,248	\$31,731
Wgt Avg Cap Cost C*	-	-	-	-	8.8%	8.6%	8.6%	7.8%	7.6%
Capital Charge / Sales	-	-	-	-	8.1%	9.0%	8.4%	5.2%	5.9%
Capital Charge - \$	-	-	-	-	\$2,902	\$3,049	\$2,812	\$2,196	\$2,409
EVA Margin	-	-	-	-	(4.6%)	(11.9%)	(8.7%)	(0.8%)	(2.3%)
x Net Revenue	-	-	-	-	\$35,769	\$33,920	\$33,386	\$41,978	\$40,701
=> EVA	-	-	-	-	(\$1,647)	(\$4,040)	(\$2,888)	(\$349)	(\$932)

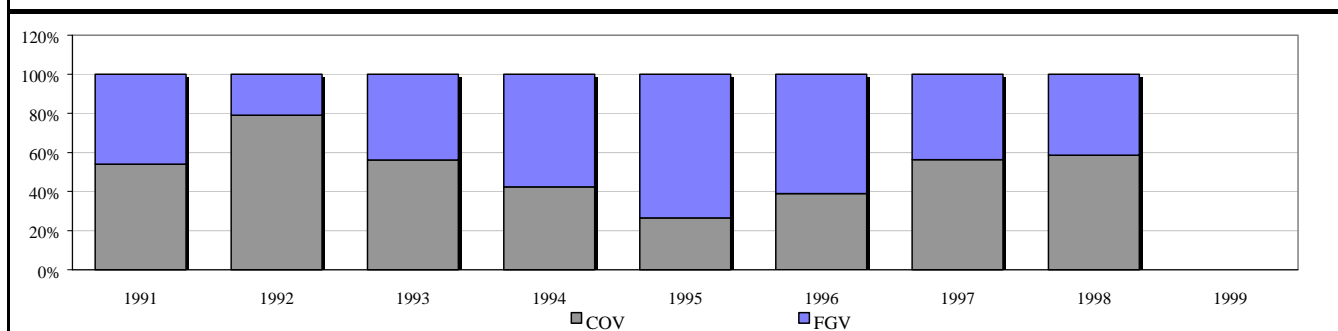
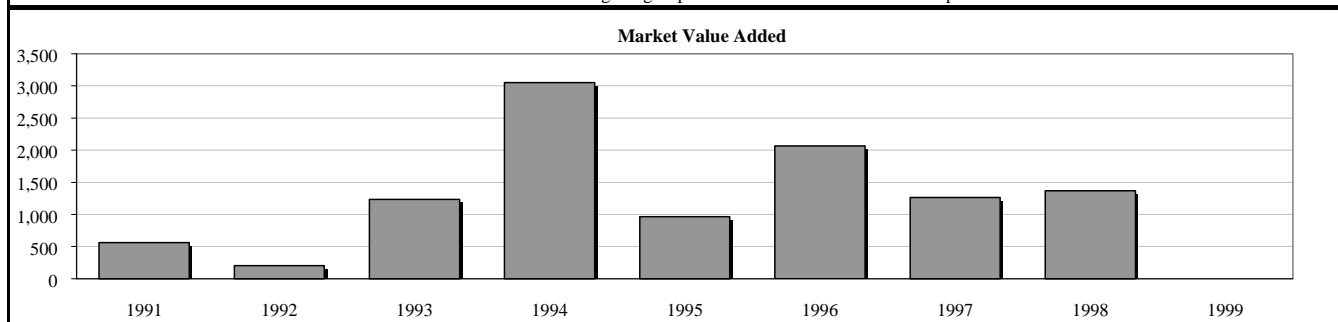
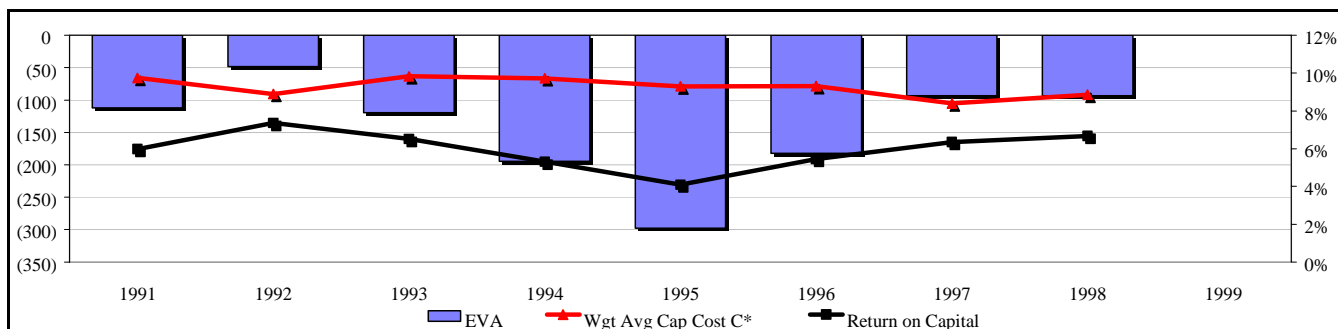




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Suzuki - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	\$9,107	\$10,869	\$12,254	\$14,176	\$11,731	\$11,157	\$11,290	\$12,521	-
Cost of Goods Sold	76.6%	78.8%	79.1%	79.2%	78.2%	77.3%	76.8%	76.1%	-
Gross Margin	23.4%	21.2%	20.9%	20.8%	21.8%	22.7%	23.2%	23.9%	-
- SG&A	18.3%	17.3%	16.9%	17.1%	17.3%	17.5%	18.6%	20.1%	-
+ Other Income	0.7%	1.0%	0.3%	0.1%	0.7%	0.1%	1.3%	1.0%	-
= NOPBT	5.8%	4.9%	4.3%	3.8%	5.2%	5.3%	5.8%	4.8%	-
- EVA Taxes	3.8%	2.8%	2.4%	2.1%	3.2%	3.0%	3.2%	2.5%	-
= NOPAT Margin	2.0%	2.1%	1.9%	1.6%	2.0%	2.3%	2.6%	2.3%	-
=> NOPAT - \$	\$178	\$233	\$234	\$234	\$235	\$258	\$290	\$287	-
NWC / Sales	9.0%	8.5%	5.2%	7.2%	15.4%	14.3%	14.9%	12.1%	-
+ Net PP&E	19.3%	17.4%	20.4%	20.4%	26.8%	22.3%	20.1%	17.6%	-
+ Other Assets	4.3%	3.2%	3.7%	3.5%	6.7%	5.8%	5.4%	4.6%	-
= Total Capital	32.6%	29.1%	29.4%	31.1%	48.9%	42.4%	40.4%	34.4%	-
=> Total Capital - \$	\$2,973	\$3,164	\$3,601	\$4,406	\$5,732	\$4,728	\$4,566	\$4,301	-
Wgt Avg Cap Cost C*	9.7%	8.9%	9.8%	9.7%	9.3%	9.3%	8.4%	8.9%	-
Capital Charge / Sales	3.2%	2.6%	2.9%	3.0%	4.5%	3.9%	3.4%	3.0%	-
Capital Charge - \$	\$290	\$281	\$354	\$429	\$533	\$440	\$383	\$381	-
EVA Margin	(1.2%)	(0.4%)	(1.0%)	(1.4%)	(2.5%)	(1.6%)	(0.8%)	(0.7%)	-
x Net Revenue	\$9,107	\$10,869	\$12,254	\$14,176	\$11,731	\$11,157	\$11,290	\$12,521	-
=> EVA	(\$112)	(\$49)	(\$120)	(\$195)	(\$298)	(\$182)	(\$93)	(\$94)	-

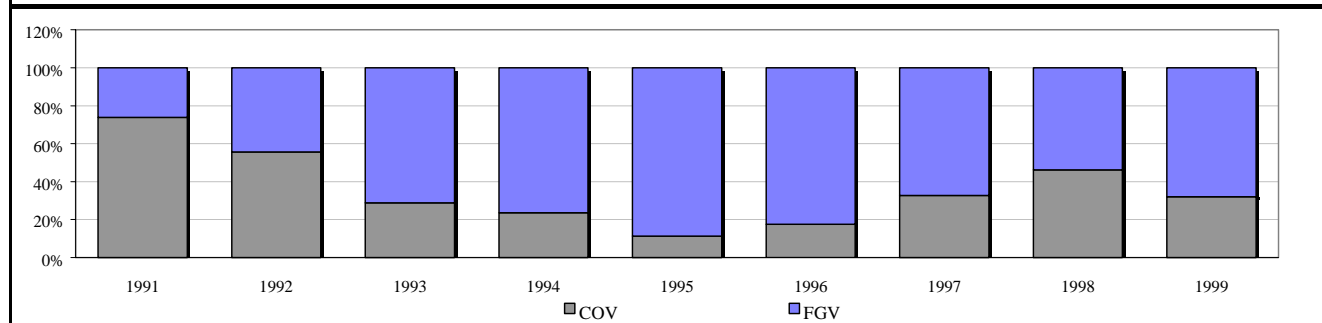
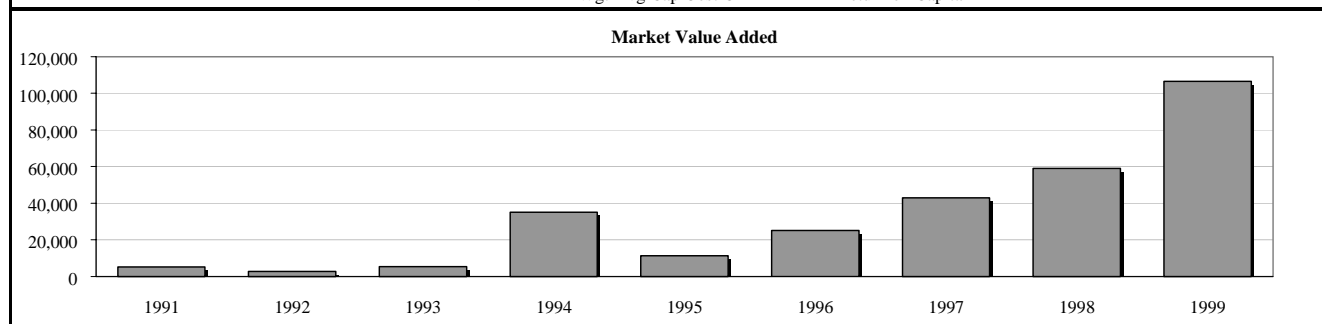
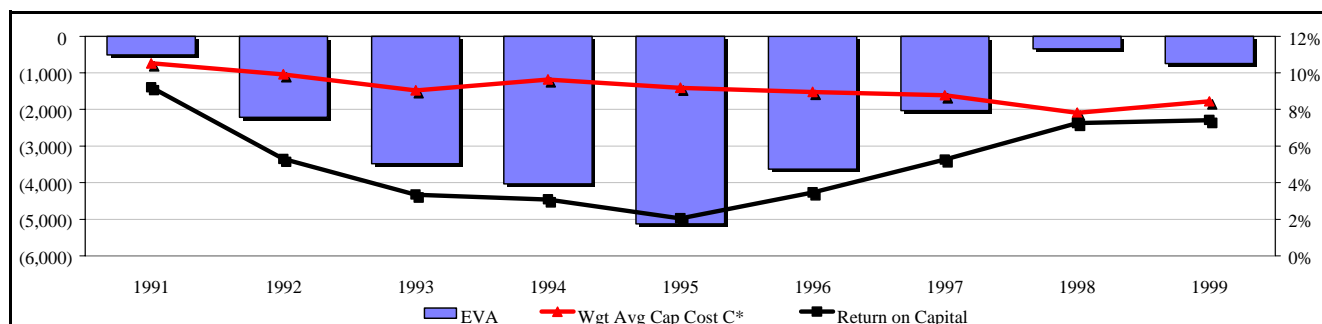




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Toyota - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Revenue - \$	\$74,143	\$88,469	\$99,375	\$108,177	\$75,713	\$86,588	\$92,010	\$98,220	\$114,575
Cost of Goods Sold	83.5%	86.3%	87.6%	87.1%	84.7%	84.1%	81.1%	78.2%	79.1%
Gross Margin	16.5%	13.7%	12.4%	12.9%	15.3%	15.9%	18.9%	21.8%	20.9%
- SG&A	11.0%	11.4%	10.4%	11.3%	12.1%	12.8%	13.5%	14.9%	15.6%
+ Other Income	2.5%	2.7%	2.0%	1.7%	0.8%	1.4%	1.0%	0.5%	0.8%
= NOPBT	8.1%	5.0%	3.9%	3.3%	4.0%	4.6%	6.5%	7.4%	6.1%
- EVA Taxes	3.2%	2.2%	1.9%	1.6%	2.0%	1.9%	3.2%	2.8%	1.4%
= NOPAT Margin	4.8%	2.9%	2.1%	1.8%	1.9%	2.6%	3.3%	4.5%	4.7%
=> NOPAT - \$	\$3,581	\$2,527	\$2,042	\$1,899	\$1,476	\$2,284	\$3,036	\$4,441	\$5,383
NWC / Sales	25.1%	21.7%	25.8%	22.6%	35.3%	31.8%	22.4%	24.3%	21.0%
+ Net PP&E	13.9%	15.3%	19.8%	22.0%	39.3%	31.6%	29.8%	29.5%	32.1%
+ Other Assets	13.4%	17.0%	15.9%	12.3%	20.4%	12.8%	10.5%	8.4%	10.2%
= Total Capital	52.4%	54.0%	61.4%	56.9%	95.0%	76.2%	62.7%	62.3%	63.3%
=> Total Capital - \$	\$38,834	\$47,784	\$61,063	\$61,590	\$71,959	\$66,007	\$57,685	\$61,149	\$72,563
Wgt Avg Cap Cost C*	10.5%	9.9%	9.0%	9.6%	9.2%	9.0%	8.8%	7.8%	8.4%
Capital Charge / Sales	5.5%	5.4%	5.6%	5.5%	8.7%	6.8%	5.5%	4.9%	5.3%
Capital Charge - \$	\$4,087	\$4,743	\$5,523	\$5,938	\$6,609	\$5,915	\$5,063	\$4,786	\$6,125
EVA Margin	(0.7%)	(2.5%)	(3.5%)	(3.7%)	(6.8%)	(4.2%)	(2.2%)	(0.4%)	(0.6%)
x Net Revenue	\$74,143	\$88,469	\$99,375	\$108,177	\$75,713	\$86,588	\$92,010	\$98,220	\$114,575
=> EVA	(\$506)	(\$2,215)	(\$3,481)	(\$4,039)	(\$5,133)	(\$3,630)	(\$2,027)	(\$345)	(\$742)

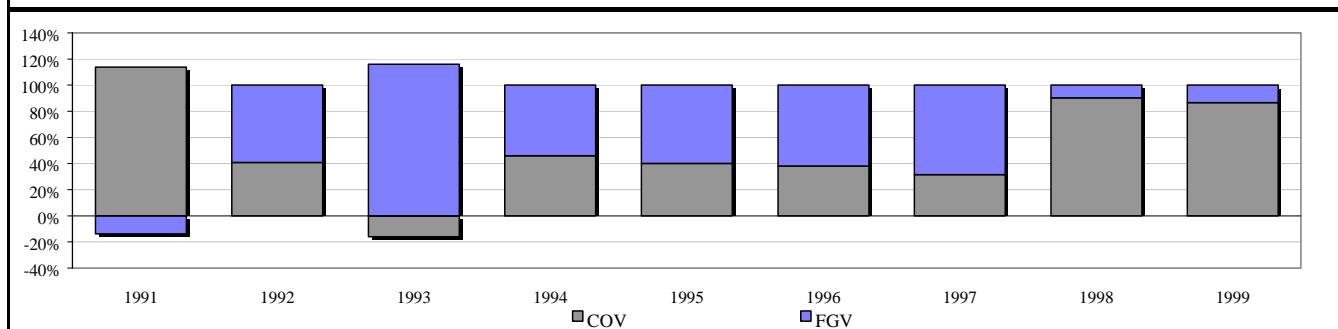
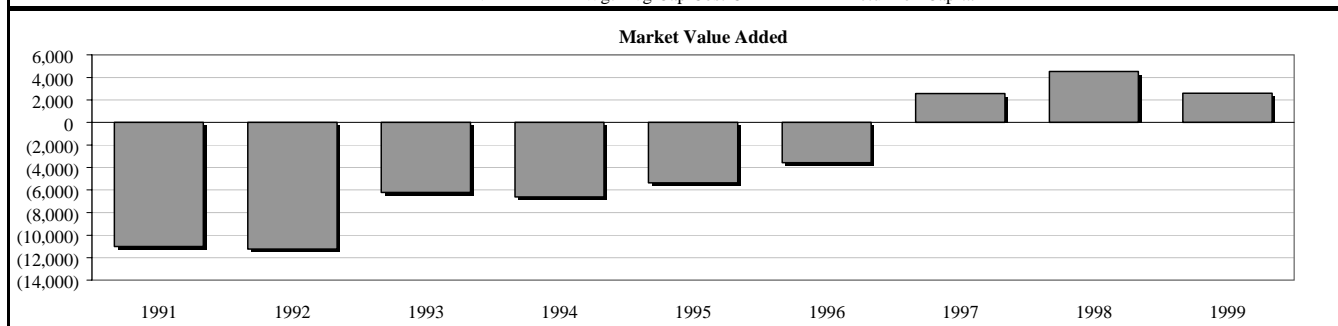
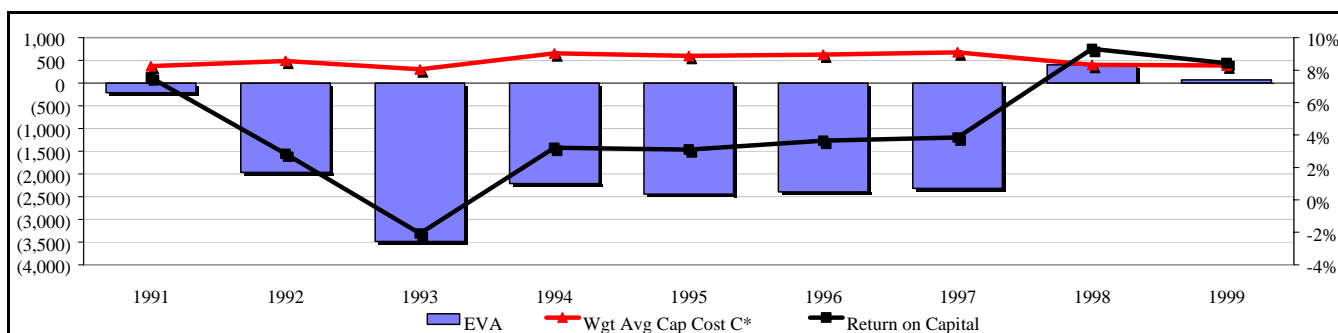




WORLD REVIEW: BEST OF TIMES, WORST OF TIMES

Volkswagen - \$MM's

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales - \$	\$50,208	\$52,677	\$44,045	\$51,658	\$61,287	\$64,950	\$62,964	\$80,063	\$79,560
Cost of Goods Sold	90.1%	92.6%	92.7%	90.1%	91.5%	90.3%	89.1%	86.6%	86.5%
Gross Margin	9.9%	7.4%	7.3%	9.9%	8.5%	9.7%	10.9%	13.4%	13.5%
- SG&A	11.4%	9.0%	12.4%	13.6%	12.2%	12.9%	11.4%	10.8%	10.6%
+ Other Income	8.6%	5.5%	5.6%	7.9%	8.1%	8.2%	6.5%	6.2%	4.5%
= NOPBT	7.1%	3.9%	0.5%	4.2%	4.4%	5.0%	6.0%	8.8%	7.4%
- EVA Taxes	2.4%	2.1%	2.1%	1.8%	2.3%	2.5%	3.3%	4.1%	2.1%
= NOPAT Margin	4.7%	1.8%	(1.6%)	2.4%	2.1%	2.5%	2.7%	4.7%	5.3%
=> NOPAT - \$	\$2,348	\$972	(\$717)	\$1,216	\$1,312	\$1,640	\$1,696	\$3,767	\$4,226
NWC / Sales	36.1%	35.4%	42.0%	40.6%	39.6%	41.9%	42.3%	29.1%	36.5%
+ Net PP&E	20.2%	22.4%	28.4%	25.9%	23.2%	20.1%	19.5%	14.8%	17.1%
+ Other Assets	5.6%	7.2%	7.8%	7.0%	6.3%	7.3%	8.3%	6.6%	9.3%
= Total Capital	61.9%	65.1%	78.2%	73.5%	69.1%	69.4%	70.1%	50.5%	63.0%
=> Total Capital - \$	\$31,092	\$34,270	\$34,446	\$37,952	\$42,327	\$45,064	\$44,138	\$40,469	\$50,117
Wgt Avg Cap Cost C*	8.2%	8.6%	8.0%	9.0%	8.9%	9.0%	9.1%	8.3%	8.3%
Capital Charge / Sales	5.1%	5.6%	6.3%	6.6%	6.1%	6.2%	6.4%	4.2%	5.2%
Capital Charge - \$	\$2,562	\$2,936	\$2,772	\$3,426	\$3,757	\$4,035	\$4,015	\$3,365	\$4,150
EVA Margin	(0.4%)	(3.7%)	(7.9%)	(4.3%)	(4.0%)	(3.7%)	(3.7%)	0.5%	0.1%
x Net Revenue	\$50,208	\$52,677	\$44,045	\$51,658	\$61,287	\$64,950	\$62,964	\$80,063	\$79,560
=> EVA	(\$214)	(\$1,964)	(\$3,489)	(\$2,210)	(\$2,445)	(\$2,395)	(\$2,319)	\$402	\$76



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NEW YORK

**1345 Avenue of the Americas
New York, NY 10105
212/261-0600**

LOS ANGELES

**1901 Avenue of the Stars
Suite 1245
Los Angeles, CA 90067
310/407-0930**

LONDON

**13 Saint George Street
Mayfair, London W1R 9DE
44-171/399-3600**

TOKYO

**3F, Toranomon 45 Mori Building
5-1-5, Toranomon, Minato-Ku
Tokyo, Japan 105-0001
81-3/3431-3310**

PARIS

**264 Rue de Faubourg
Saint Honore, 75008 Paris
33-1/56 33 17 70**

SINGAPORE

**80 Raffles Place
UOB Plaza 1, #28-02
Singapore, 048624
65/538-3532**

MUNICH

**Salvatorplatz 4
D-80333 München
Tel.: +49 (0)89/24 20 71-0
Fax: +49 (0)89/24 20 71-11
eva@sternstewart.de**

SYDNEY

**Grosvenor Place
225 George Street, Level 23
Sydney, NSW 2000
61-2/9251-3055**

MILAN

**Ambrosetti Stern Stewart Italia
Galleria Pattari, 2
20122 Milano
39-02/725-6501**

JOHANNESBURG

**Suite 316, South Tower
Sandton Square
Sandton 2196
27-11/883-5894**

SÃO PAULO

**Rua do Rocio, 291 - cj. 91
Vila Olímpia
São Paulo, SP, Brasil 04552-000
55-11/3040-0851**