

Apple Intel AMD



Input interpretation:

Apple (AAPL) | Intel (INTC) | AMD (AMD)

Latest trades:

| AAPL | \$122.95 (AAPL NASDAQ 2 minutes ago) |
|------|--|
| INTC | \$15.54 (INTC NASDAQ 8 minutes ago) |
| AMD | \$4.24 (AMD NYSE 2 minutes ago) |

Fundamentals and financials:

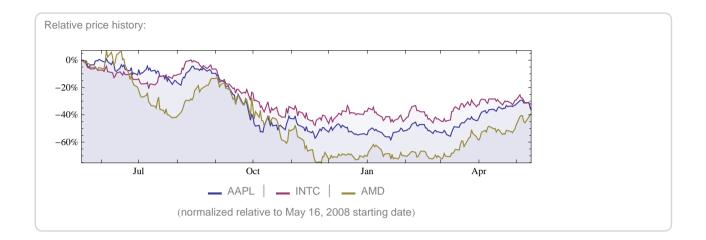
| | Apple | Intel | AMD |
|--------------------------|------------------|-----------------|------------------|
| market cap | \$ 106.6 billion | \$84.5 billion | \$ 2.923 billion |
| revenue | \$33.69 billion | \$35.06 billion | \$5.529 billion |
| employees | 35 100 | 83 900 | 14700 |
| revenue / employee | \$1.146 million | \$438300 | \$ 365 400 |
| net income | \$5.018 billion | \$4.478 billion | -\$3.154 billion |
| shares outstanding | 892.1 million | 5.585 billion | 667.3 million |
| annual earnings / share | \$5.30 | \$0.68 | -\$4.51 |
| P/E ratio | 22.55 | 22.25 | -0.9712 |
| annual dividends / share | | \$0.56 | |
| dividend yield | | 3.55% | |

(based on trailing 12-month totals, last close price and annual employees)

Recent returns:

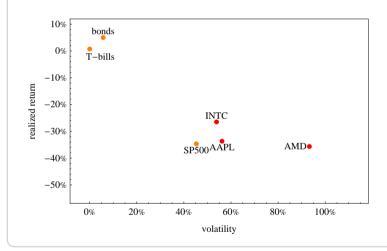
| | day | month | YTD | year | 5 year |
|------|--------|---------|---------|---------|----------|
| AAPL | +2.90% | +3.92% | +44.05% | -33.99% | +808.72% |
| INTC | +2.71% | -2.94% | +6.00% | -34.82% | -42.53% |
| AMD | -3.20% | +16.80% | +96.30% | -40.78% | -69.43% |

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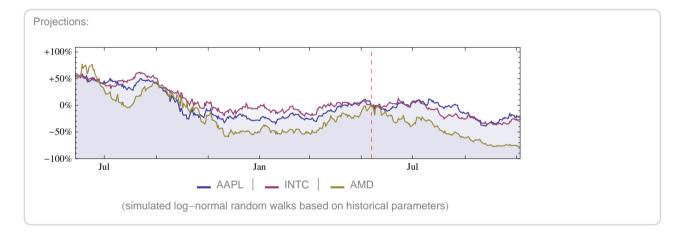


Performance comparisons:

| | average daily return | daily volatility | annual return | annual volatility |
|----------|----------------------|------------------|---------------|-------------------|
| AAPL | -0.163% | 3.55% | -33.68% | 56.18% |
| INTC | -0.123% | 3.40% | -26.49% | 53.87% |
| AMD | -0.176% | 5.89% | -35.66% | 93.29% |
| SP500 | -0.170% | 2.86% | -34.68% | 45.29% |
| bonds | +0.019% | 0.36% | +5.01% | 5.74% |
| T- bills | +0.003% | 0.00% | +0.74% | 0.00% |



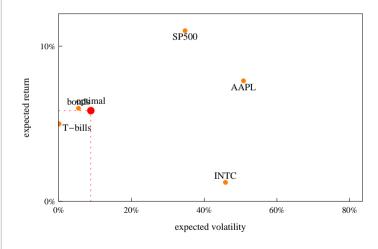
| Correlation matri | x: | | | |
|-------------------|-------|-------|-------|-------|
| | AAPL | INTC | AMD | SP500 |
| AAPL | 1 | 0.595 | 0.44 | 0.644 |
| INTC | 0.595 | 1 | 0.563 | 0.777 |
| AMD | 0.44 | 0.563 | 1 | 0.571 |
| SP500 | 0.644 | 0.777 | 0.571 | 1 |



Mean-variance optimal portfolio:

| | weight | shares | cost |
|---------|--------|--------|-----------|
| AAPL | 5.59% | 455 | \$ 55 940 |
| INTC | 8.14% | 5238 | \$81 400 |
| AMD | 1.22% | 2877 | \$ 12 200 |
| SP500 | 15.69% | 1754 | \$156900 |
| bonds | 34.04% | 340 | \$340000 |
| T-bills | 35.31% | 353 | \$353000 |

(amounts based on \$1 million portfolio)



| optimal portfolio's expected yearly return | 5.85% |
|--|-------|
| optimal portfolio's yearly volatility | 8.83% |

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