

# Some Uses Of Consensus Long-Term Growth Estimates In US Stock Selection

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Uses of annual fiscal year consensus estimates are widely researched and used in many investment processes. Much less time and effort has been devoted to studying the uses of consensus growth rates, yet “growth” is what most investors are seeking.

This research project explores the accuracy and use of growth rates and changes in growth rates as sources of relative performance. The findings are:

- 1) The median absolute deviation between the forecast 5 year consensus growth and the subsequent 5 year actual growth is 10%. There is a .08 correlation between forecast and actual growth rates. This is significantly better than using historical growth rates as a proxy.
- 2) The accuracy varies significantly according to stock characteristics: bigger, more widely covered stocks with average valuations, stable historic earnings and a narrow dispersion of forecasts have a median absolute deviation of 5%.
- 3) High forecast growth names outperform at a 3 month time horizon, but underperform over a 5 year period.
- 4) Growth forecasts are best used in combination with valuation – high forecast growth combined with high valuations (Perhaps a market confirmation of the growth story) is the best performing group over 3 month and 5 year horizons.
- 5) High actual growth is what the market “pays” for – the high growth companies outperform the low growth companies by almost 25% per year. This is particularly true in the high forecast growth area, where the spread is over 36% per year.
- 6) Revisions in growth rates are auto-correlated – a revision last month ups the chances of a revision this month: 12% to 18% for positive revisions; 16% to 25% for downward revisions.
- 7) Companies with positive revisions to their long-term growth rates outperform those with negative revisions, especially when the growth rate is high.
- 8) A simple look at aggregate growth rate revision data as a tool for timing growth versus value shows little promise.
- 9) The deterioration of “Value” as a stock selection factor has been in the high forecast growth segment of the market.

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# Questions To Answer

- How accurate are the estimates?
  - overall, by number of analysts, by dispersion, by size
- Are they better than historic numbers?
- Returns analysis:
  - high forecast growth versus low growth
  - high delivered growth versus low
  - interactions, including valuation

# More Questions to Answer

- Do revisions matter?
- Are revisions correlated?
- % change versus diffusion?
- Can the growth-based data help in style allocation?

# The Data

- Consensus 3-5 year growth forecasts
- Actual: Log-linear least squares fit to actual
- Stability: actual deviation around the fit
- Dispersion: STD/Median estimate
- E/P: next 12 months/price
- 3 or more estimates; 12/84 - 8/2000
- In some cases, enormous survivor bias

# How Accurate Are The Estimates?

	Median AbsDev Forecast vs Actual	Median AbsDev Historical vs Actual
Median Abs Dev Ptile/Sector Ptile	10.3% 25/24	16.2% 24/27
Correlation Ptile/Sector Ptile	.08 .14/.07	-.06 -.05/-.10

# How Accurate Are The Estimates?

## Median Absolute Deviation %

Coverage: >10 vs < 6	8.3	12.2
Size: Big vs Little	8.8	21.9
Valuation: Low vs High	10.4	15.5
Dispersion: Wide vs Narrow	11.9	9.3
Stability: Volatile vs Stable	17.5	6.3

# High Accuracy Group

- Screen:
  - > 10 analysts
  - top quintile on size
  - middle 3 quintiles on E/P Forward
  - narrowest dispersion quintile
  - most stable historically quintile
- Median absolute deviation: 5.2%



# High Accuracy Group

- Correct group: 85% vs. 51%  
(Q1-Q1+Q234-Q234+Q5-Q5)
- Really bad: 0% vs. 5%  
– (Q1-Q5+Q5-Q1)
- Low Growth: 10% vs. 18%

# High Accuracy Group

## (As of 11/14/00)

PAYX	PAYCHEX INC	30.0
TLAB	TELLABS INC	30.0
ESRX	EXPRESS SCRIPTS INC -CL A	27.5
HD	HOME DEPOT INC	24.0
CAH	CARDINAL HEALTH INC	21.0
DV	DEVRY INC	20.0
FISV	FISERV INC	20.0
HDI	HARLEY-DAVIDSON INC	20.0
KRB	MBNA CORP	20.0
CTAS	CINTAS CORP	19.5
MDT	MEDTRONIC INC	18.0
SWY	SAFEWAY INC	16.0
FITB	FIFTH THIRD BANCORP	15.0
NFS	NATIONWIDE FINL SVCS -CL A	15.0
UPS	UNITED PARCEL SERVICE INC	15.0
WLP	WELLPOINT HLTH NETWRK -CL A	15.0
AIG	AMERICAN INTERNATIONAL GROUP	14.0
FNM	FANNIE MAE	14.0
AXP	AMERICAN EXPRESS	13.8
ABT	ABBOTT LABORATORIES	12.0

# Do The Estimates Matter?

Average Relative 3 Month Return %

Forecast Growth	Market Cap		Valuation	
	Big	Small	Low	High
High	3.9	-.4	-5.0	4.1
Low	-2.4	-.4	1.6	.1

# Do The Estimates Matter?

Average Relative Annualized 5 Year Return %

Forecast Growth	Market Cap		Valuation	
	Big	Small	Low	High
High	5.0	4.9	5.9	9.0
Low	-4.2	2.8	1.6	-1.0

# Do The Estimates Matter?

Average Relative Annualized 5 Year Return %

Forecast Growth		Actual Growth	
	Overall	High	Low
High	2.2	21.1	-15.5
Low	4.8	9.7	-2.5
Overall		15.9	-8.7

# High Accuracy Group

Average Relative Annualized 5 Year Return %

Forecast Growth		Actual Growth	
	Overall	High	Low
High	3.0	12.0	n.m.
Low	10.7	n.m.	11.3
Overall		16.8	-3.8

# Valuation, Growth and Return

## Average 1 Month Portfolio Return Spreads

Low vs High	Growth		
	Overall	High	Low
All	.26	-.47	.95
84-92	.69	.22	1.16
93-00	-.19	-1.18	.73
99-00	-1.98	-4.12	1.17

# Revisions

	Diffusion	Revision
Correlations		
Prior Month	.0365	-.0022
Non-Zero Prior	.0681	-.0059
With 1M TR (Ptile)	.0179	.0104
% Positive		
Overall	11.7%	
Given a prior +	18.3%	
% Negative		
Overall	16.2%	
Given a prior -	24.8%	



# Revision and Return

Average 1 Month Portfolio Return Spreads

Diffusion: + vs -	Growth	
	Overall	Low
All	.48	.43
84-92	.41	.42
93-00	.56	.44

# Current Q1 Growth With Positive Revisions

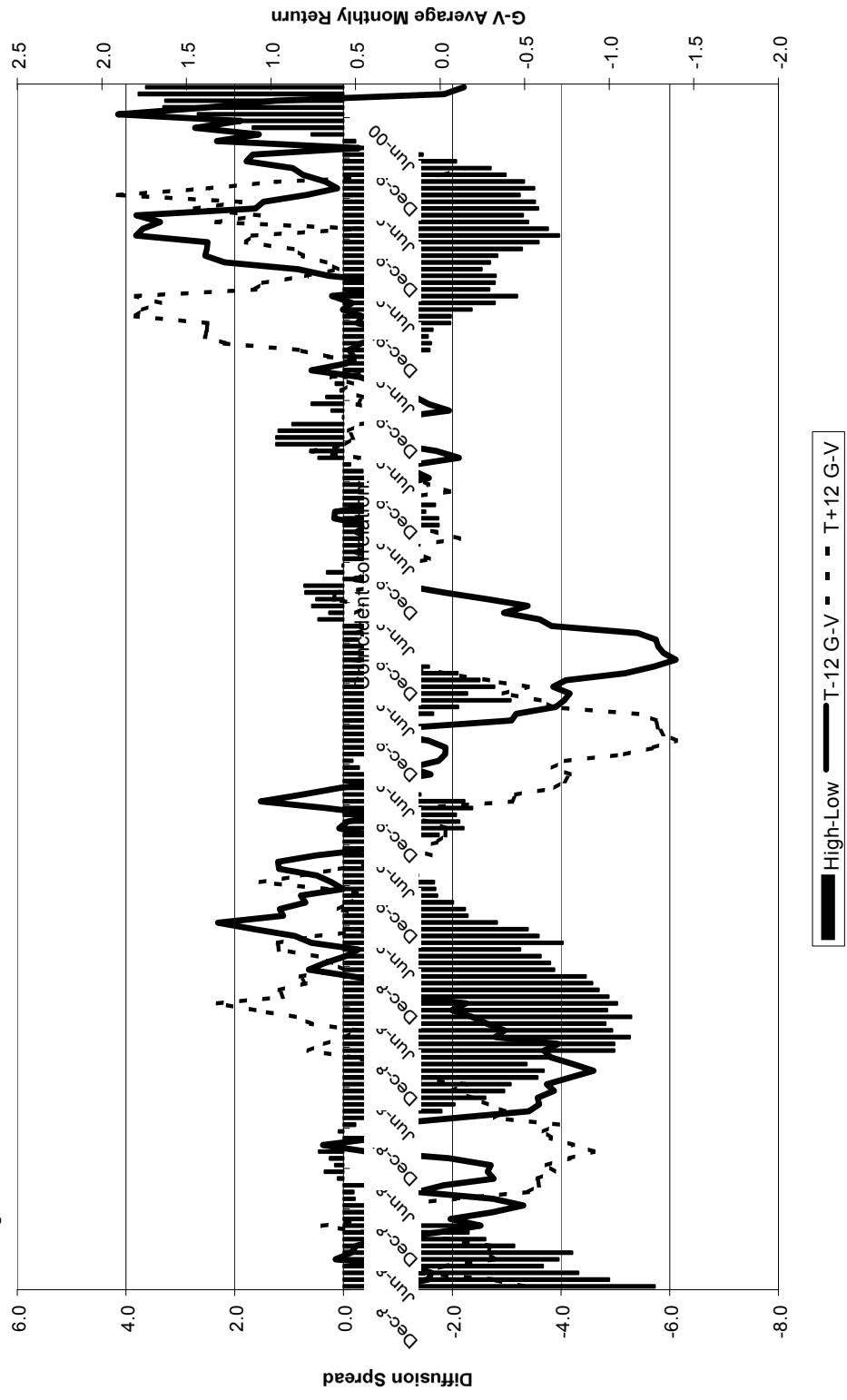
	# Up	# Down	# of	Median
APWR	1	0	4	57.5
ASTROPOWER INC				
CPN	2	0	11	40.0
CALPINE CORP				
CEFT	1	0	7	35.0
CONCORD EFS INC				
CORI	1	0	4	57.5
CORILLIAN CORP				
DTPI	1	0	9	40.0
DIAMOND TECH PRTRNS -CL A				
EXDS	2	0	10	75.0
EXODUS COMMUNICATIONS INC				
IMRS	1	0	4	34.0
IMRGLOBAL CORP				
INSP	1	0	6	62.5
INFOSPACE INC				
MERQ	1	0	6	40.0
MERCURY INTERACTIVE CORP				
PKTR	1	0	4	70.0
PACKETEER INC				
PWAV	1	0	7	40.0
POWERWAVE TECHNOLOGIES INC				
PROX	1	0	10	42.0
PROXIM INC				
QLGC	1	0	6	35.0
QLOGIC CORP				
QCOM	1	0	15	35.0
QUALCOMM INC				
SEBL	1	0	11	45.0
SIEBEL SYSTEMS INC				
TKLC	1	0	4	40.0
TEKELEC				
VRTS	1	0	11	50.0
VERITAS SOFTWARE CO				
WIND	1	0	5	35.0
WIND RIVER SYSTEMS INC				

# Current Q1 Growth With Negative Revisions

		# Up	# Down	# of	Median
ALSI	ADVANTAGE LEARNING SYS INC	0	1	1	35.0
ADVS	ADVENT SOFTWARE INC	0	1	4	34.4
ALLR	ALLAIRE CORP	0	1	5	50.0
AMZN	AMAZON.COM INC	0	2	7	50.0
AMTD	AMERITRADE HLDG CORP -CL A	0	1	10	35.0
ANSR	ANSWERTHINK INC	0	3	7	33.0
ARTC	ARTHROCARE CORP	0	2	6	42.5
BEAS	BEA SYSTEMS INC	0	1	10	46.5
BRNC	BRAUN CONSULTING INC	0	2	5	40.0
BWAY	BREAKAWAY SOLUTIONS INC	0	3	7	45.0
CTXS	CITRIX SYSTEMS INC	0	1	6	37.5
CLRS	CLARUS CORP	0	1	5	100.0
CNET	CNET NETWORKS INC	0	1	7	50.0
CCRD	CONCORD COMMUNICATIONS INC	0	1	5	40.0
DIGX	DIGEX INC	0	1	4	66.5
DCTM	DOCUMENTUM INC	0	1	7	37.5
EBAY	EBAY INC	0	1	13	50.0
IISX	INTEGRATED INFORMATION SYS	0	1	4	45.0
JDSU	JDS UNIPHASE CORP	0	1	19	50.0
MVSN	MACROVISION CORP	0	2	4	40.0
MRCH	MARCHFIRST INC	0	6	18	36.5
MEDI	MEDIMMUNE INC	0	1	6	44.5
MUSE	MICROMUSE INC	0	1	9	50.0
PRGN	PEREGRINE SYSTEMS INC	0	1	4	45.0
PWER	POWER-ONE INC	0	1	4	41.0
PCLN	PRICELINE.COM INC	0	1	7	50.0
RAZF	RAZORFISH INC	0	2	5	40.0
RFMD	RF MICRO DEVICES INC	0	1	7	43.0
SONE	S1 CORPORATION	0	1	7	35.0
SAPF	SAPIENT CORP	0	2	17	45.0
SSSW	SILVERSTREAM SOFTWARE INC	0	1	4	70.0
TSTN	TURNSTONE SYSTEMS INC	0	1	4	45.0
VIAN	VIAVT CORP	0	1	11	50.0
VNWK	VISUAL NETWORKS INC	0	1	7	40.0
VTSS	VITESSE SEMICONDUCTOR CORP	0	1	10	40.0

# Revision and Growth vs Value Returns

Coincident Correlation:  $-.02$   
Leading Correlation:  $-.33$



# Summary and Conclusions

- Consensus long-term growth estimates are more accurate than historical projections, but not very accurate
- There is a “higher accuracy” subset
- High-growth validated by high valuation outperforms
- Value still working for low growth names

# Summary and Conclusions

- Revisions matter, especially for high growth names
- High growth versus low growth revisions are negatively correlated with subsequent high growth versus low growth returns
- Long-term consensus growth estimates can add value to an investment process