Chateau Whistler

Lehman Brothers
Fourth Global Fixed-Income Capital
Workshop/Retreat
July 29-August 2, 2000

CASE 3:

Global Relative Value in the Early 21st Century

CASE MODERATOR:

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The case preparers would like to thank Jock Coffin for his very helpful review and to acknowledge all the bond managers in Asia, Australia, Europe, and the Americas, who have been so generous in sharing their industry and market insights with us over the years.

Case Study

DREAM TEAM ASSET MANAGEMENT COMPANY

CEO:	Maria Vallenzuela
Global CIO:	Mohammed Sharif
Global Director of Marketing:	Scott Daniels
Chief Asian Asset Manager:	Kentaro Kizu
Chief European Asset Manager:	Lars Veblen
Chief Americas Asset Manager:	Amitab Varadhachary
Global Credit Research Director:	Vadim Gold
Global Quantitative Research Director:	Mary Sullivan
Global Economics Director:	Russell Harris

2:35 p.m., U.S. Eastern Daylight Time
Saturday, July 8, 2000
Aboard United Airlines Flight No. 800
New York to Tokyo

The lunch trays finally cleared, Maria Vallenzuela, the newly appointed CEO of Dream Team Asset Management Company (DTAMCO) headquartered in New York, boots up her laptop and prepares an e-mail for dispatch immediately upon arrival at the Hotel Okura in Tokyo.

Dear Senior Management Colleagues:

As you know, we will hold our annual strategic offsite at Whistler on August 1-2, 2000.

Our objective's simple: become the acknowledged global leader in the management of fixed-income assets. We've come a long way during the 1990s. Our growth rate was phenomenal. Thanks to your efforts as well as our 1998 acquisition by Colossus Universal Bank that brought us $33 billion, our assets under management skyrocketed from $13 billion in 1990 to $97 billion on June 30, 2000. Originally a U.S.-only firm, we now have offices on four continents. We are indisputably among the top-20 total return managers of debt assets in the world.

Despite our fantastic record, I worry about our ability to replicate our successful 1990s during this first decade of the 21st century. Individually, many of you have shared this same concern with me.

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Several of our major competitors are growing even more rapidly than Dream Team. The asset management industry is in the midst of a lightning evolution thanks to the combined forces of multiple factors: consolidation to achieve scale economies; global convergence of economic, market, accounting, and portfolio management methods; technology (arrival of e-primary and e-secondary markets); and introduction of new indices (U.S. Universal and Global Aggregate).

Aside from 1999, our performance has been less dominant from 1997 through mid-2000. Fortunately, we weren't alone and also have a fantastic marketing team led by Scott Daniels. Nonetheless, I have an uncomfortable feeling that our investment process tends to be "rear-view engineered." I'd like to make sure that we are as forward-looking as possible.

I'd like to use our Whistler offsite to air our concerns, as well as to ensure that we have charted the best strategic course for our business during the coming decade. In particular, let's devote a lot of time to discussing our investment decision-making and asset allocation processes. All else being equal on the marketing and administration fronts, only performance matters. How can we optimally organize Dream Team to ensure the highest likelihood of sustained outperformance?

Prior to our retreat, in order to maximize our discussion time, I'd like each of you to prepare and distribute a memo to your fellow senior manager attendees covering the following issues: strategic outlook for the global debt capital markets from 2000-2005; strategic vision for our asset management practices; planned enhancements for your Dream Team functions; and general Dream Team organizational recommendations. For both review and to challenge your thinking, I am enclosing several Excel files with such key series as excess returns, nominal returns, asset class correlations, and global credit quality. Feel free to take your best shot!

Once again, I have asked our marvelous CIO, Mohammed Sharif, to synthesize and to respond to your views, as well as to organize our discussion at Whistler.

As always, please approach this assignment in a creative and completely uninhibited manner. Forget titles. This is a knowledge organization. Our competitive position hinges on our collective intelligence.

I look forward to a lively discussion at our Whistler retreat. Given the remarkable quality of Dream Team, I have every confidence that we will preside over $300 billion of assets by 2005. And why not $1 trillion in 2010?

Let's start making our dreams come true at Whistler.

Best wishes,

Maria

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Figure 1. **Actual Excess Returns: 1990 through July 15, 2000 and Projected through 2009**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Cum. Total 1990-1999	1990-7/15/00 Sharpe Ratio	7/15 2000	YTD 2000	Forecast 2000	Forecast 2000-2009
Global Aggregate***	-	-	-	-	-	-	-	-	-	-	-	-	10	-61	-21	289
Global Treasury (ex-U.S.)[1]	-457	-433	-128	300	-108	-111	863	108	125	552	712	0.16	-3	-138	-170	500
U.S. Universal	-14	95	7	52	15	25	125	51	-208	217	366	0.21	25	-76	-1	865
U.S. Aggregate	3	50	-10	-9	36	8	47	31	-74	81	163	0.14	19	-68	-9	290
U.S. Agency	39	51	21	49	-17	52	26	48	-44	42	267	0.30	13	-100	-25	350
U.S. MBS	115	9	-104	-98	97	-44	79	122	-84	113	204	0.13	22	-29	40	225
U.S. ABS	-	-	72	116	54	43	70	-12	-83	137	397**	0.57	11	-15	35	500
U.S. Inv. Grade Corp.	-177	229	97	80	58	114	120	-29	-220	177	449	0.14	44	-222	-90	550
144A	-	-	-	-	-	-	-	-	-532	340	-193**	-0.40	43	-279	-110	550
U.S. High Yield	-515	1,660	552	671	258	57	769	344	-777	479	3,498	0.45	57	-514	-200	3,600
Eurodollar	-	-	-	-	-	52	70	-58	-74	85	75**	-0.07	23	-106	-10	250
Emerging Markets	-	-	-	2,489	-1,209	857	2,293	439	-1,619	2,248	5,499**	0.52	150	441	525	6,000
Euro-Aggregate*	-	-	-	-	-	-	-	-	11	5	16**	-0.01	3	-17	15	180
Pan-European	-	-	-	-	-	-	-	-	-	14	14**	-0.12	5	-21	25	200
Asian-Pac. Agg. Index****	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	170

[1] Hedged into U.S. dollars.
* Euro-Aggregate Index began in June 1998.
** Cumulative returns begin after 1990.
*** Global Aggregate Index began on January 1, 2000, reported on hedged dollar basis.
**** Asian-Pacific Aggregate Index began on July 1, 2000.

Excess Return:
Definition: Incremental return that removes yield curve effects embedded in nominal total returns, isolating the reward (excess return) earned for the assumption of credit and volatility risk.

Methodology: Each non-Treasury bond in an index is hedged against interest rate moves using similar-duration U.S. Treasury bonds. The nominal return of the hedging Treasury bonds (the credit-risk-free benchmark) is subtracted from the total return of each hedged bond to form the bond's excess return.
The individual performance differentials are then market-value weighted to arrive at an overall excess return for each asset class.

For the Global Treasury Index, excess returns are relative to U.S. Treasury bonds on a currency-hedged basis.
For the Euro-Aggregate and Pan-European Indices, excess returns are reported in euro and are calculated over comparable-duration like-currency government bonds.

Forecast Methodology:
2000: Excess return forecasts equal the option-adjusted spread (OAS) with adjustments for expected spread movements.
Decade: Excess return forecasts equal ten times the current OAS less the product of the *a posteriori* probability of underperformance and the average amount of underperformance for the 1990s.

Figure 2. **Total Nominal Returns** (%) **Lehman Brothers Fixed Income Indices**
1973 through June 30, 2000

	Global Agg[a]	Asian-Pac Agg[f]	Pan-Euro Agg (EUR)[b]	Euro-Agg (EUR)	U.S. $-Den Univ	U.S. Agg	U.S. Tsy	U.S. Agy	U.S. MBS	U.S. ABS	U.S. Credit	Muni	Global HY[a]	U.S. HY Corp	EMG
1973	-	-	-	-	-	-	3.51	-	-	-	1.51	-	-	-	-
1974	-	-	-	-	-	-	7.05	-	-	-	-5.86	-	-	-	-
1975	-	-	-	-	-	-	8.07	-	-	-	16.70	-	-	-	-
1976	-	-	-	-	-	15.60	11.82	13.00	16.31	-	19.34	-	-	-	-
1977	-	-	-	-	-	3.04	2.67	3.05	1.89	-	3.16	-	-	-	-
1978	-	-	-	-	-	1.39	2.06	1.25	2.41	-	0.35	-	-	-	-
1979	-	-	-	-	-	1.93	5.73	5.20	0.13	-	-2.10	-	-	-	-
1980	-	-	-	-	-	2.71	5.61	5.14	0.65	-	-0.29	-8.92	-	-	-
1981	-	-	-	-	-	6.25	9.24	9.73	0.07	-	2.95	-10.23	-	-	-
1982	-	-	-	-	-	32.62	27.84	26.72	43.04	-	39.20	40.87	-	-	-
1983	-	-	-	-	-	8.36	7.05	8.32	10.13	-	9.27	8.05	-	5.84	-
1984	-	-	-	-	-	15.15	14.47	14.53	15.79	-	16.62	10.55	-	9.70	-
1985	-	-	-	-	-	22.10	20.91	18.12	25.21	-	24.06	20.02	-	25.64	-
1986	-	-	-	-	-	15.26	15.61	13.76	13.43	-	16.53	19.32	-	17.45	-
1987	-	-	-	-	-	2.76	2.00	3.37	4.29	-	2.56	1.51	-	4.99	-
1988	-	-	-	-	-	7.89	6.99	7.28	8.72	-	9.22	10.16	-	12.53	-
1989	-	-	-	-	-	14.53	14.38	13.33	15.35	-	14.09	10.79	-	0.83	-
1990	-	-	-	-	-	8.96	8.54	9.71	10.72	-	7.05	7.29	-	-9.59	-
1991	-	-	-	-	-	16.00	15.29	15.42	15.72	-	18.51	12.14	-	46.08	-
1992	-	-	-	-	-	7.40	7.21	7.31	6.95	7.35	8.69	8.81	-	15.75	-
1993	-	-	-	-	-	9.75	10.68	10.51	6.84	7.95	12.16	12.29	-	17.12	38.73
1994	-	-	-	-	-	-2.92	-3.38	-3.32	-1.61	0.13	-3.93	-5.17	-	-1.03	-13.44
1995	-	-	-	-	-	18.47	18.35	18.27	16.80	13.43	22.25	17.45	-	19.17	23.85
1996	-	-	-	-	-	3.63	2.70	3.30	5.35	5.05	3.28	4.43	-	11.35	28.33
1997	-	-	-	-	-	9.65	9.57	9.70	9.49	7.41	10.23	9.19	-	12.76	13.18
1998	-	-	-	7.51	-	8.69	10.03	8.85	6.96	7.76	8.57	6.48	-	1.87	-11.60
1999	**3.54**	**-**	**0.23**	**-1.74**	**0.17**	**-0.82**	**-2.56**	**-0.94**	**1.86**	**1.81**	**-1.96**	**-2.06**	**10.45**	**2.39**	**23.07**
YTD	**0.56**	**0.37**	**2.05**	**2.06**	**3.79**	**3.99**	**5.37**	**3.58**	**3.67**	**3.35**	**2.68**	**4.48**	**2.14**	**-1.21**	**7.56**
YTD Annualized	**1.12**	**0.74**	**4.10**	**4.12**	**7.58**	**7.98**	**10.74**	**7.16**	**7.34**	**6.70**	**5.36**	**8.96**	**4.28**	**-2.42**	**15.12**

Figure 2. **Total Nominal Returns** (%) **Lehman Brothers Fixed Income Indices** *(continued)*
1973 through June 30, 2000

	Global Agg[a]	Asian-Pac Agg[f]	Pan-Euro Agg (EUR)[b]	Euro-Agg (EUR)[c]	U.S. $-Den Univ	U.S. Agg	U.S. Tsy	U.S. Agy	U.S. MBS	U.S. ABS	U.S. Credit	Muni	Global HY[a]	U.S. HY Corp[d]	EMG
Mean															
(1973-2000)	-	-	-	-	-	9.46	9.01	9.15	9.75	6.40	9.20	8.66	-	10.58	14.65
(1973-1979)	-	-	-	-	-	5.49	5.84	5.63	5.10	-	4.73	-	-	-	-
(1980-1989)	-	-	-	-	-	12.76	12.41	12.03	13.67	-	13.42	10.21	-	11.00	-
(1990-2000)	-	-	-	-	-	7.89	7.92	7.82	7.86	6.40	8.20	7.26	-	10.31	14.65
Std. Dev.															
(1973-2000)	-	-	-	-	-	7.95	6.87	6.66	9.61	3.84	10.06	11.05	-	12.58	18.53
(1973-1979)	-	-	-	-	-	6.77	3.46	5.18	7.48	-	9.55	-	-	-	-
(1980-1989)	-	-	-	-	-	9.33	7.83	6.90	12.84	-	11.78	14.85	-	8.43	-
(1990-2000)	-	-	-	-	-	6.30	6.72	6.36	5.36	3.84	7.80	6.42	-	15.04	18.53
Comp. Annual Return															
(1973-2000)	-	-	-	-	-	8.52	8.80	8.96	9.38	6.34	8.77	8.15	-	9.94	13.25
(1973-1979)	-	-	-	-	-	5.33	5.80	5.53	4.99	-	4.37	-	-	-	-
(1980-1989)	-	-	-	-	-	13.11	12.17	11.84	13.06	-	12.90	9.33	-	10.73	-
(1990-2000)	-	-	-	-	-	7.98	7.73	7.64	7.73	6.34	7.95	7.08	-	9.45	13.25

[a] Returns reported on a U.S. dollar-hedged basis.
[b] Reported in euros and on a currency-hedged basis.
[c] Reported in euros.
[d] Half-year number in 1983; High Yield Index introduced on 7/1/83.
[e] Index introduced in 1993; Expanded beyond Latin America in 1997.
[f] Index introduced June 1, 2000. Returns through 7/21/00.

Figure 3. **Total Nominal Returns** (%) **Lehman Brothers Fixed Income Indices**
1987 through June 30, 2000

	U.K.		Japan		France		Canada		Australia	
	Hedged*	**Unhedged**	**Hedged**	**Unhedged**	**Hedged**	**Unhedged**	**Hedged**	**Unhedged**	**Hedged**	**Unhedged**
1987	-1.51	48.44	39.12	10.64	2.68	24.04	-	10.52	-	-
1988	17.19	2.83	3.42	10.64	16.65	3.18	2.95	19.32	-	-
1989	13.38	-3.76	-14.27	3.19	5.06	9.77	7.42	16.36	6.38	5.48
1990	6.65	30.65	7.10	2.40	5.19	20.88	10.53	7.57	11.29	15.88
1991	15.88	12.50	22.69	11.47	11.47	13.13	16.66	21.12	19.15	22.96
1992	-7.75	-3.32	11.01	9.99	3.53	5.06	7.33	0.55	7.36	-0.12
1993	17.28	19.06	27.16	14.06	13.49	13.24	14.67	11.62	15.80	16.29
1994	10.24	-1.39	8.92	-1.06	-7.43	4.11	-5.12	-9.83	-7.30	6.68
1995	10.39	15.61	10.13	19.04	16.20	27.55	18.94	23.27	18.27	15.10
1996	4.04	18.24	-5.81	11.05	13.37	5.24	13.00	11.32	10.02	19.63
1997	5.40	10.25	-4.13	12.71	9.44	-7.24	12.29	5.20	12.61	-7.51
1998	4.40	20.62	15.94	5.28	14.87	21.24	10.05	1.86	11.04	3.66
1999	13.90	-4.30	15.94	10.61	-0.32	-17.08	-1.20	4.20	-1.81	4.20
YTD	**4.15**	**-2.16**	**-2.78**	**3.54**	**3.60**	**-2.16**	**5.73**	**3.11**	**6.69**	**-2.32**
YTD Annualized	**8.30**	**-4.32**	**-5.56**	**7.08**	**7.20**	**-4.32**	**11.46**	**6.22**	**13.38**	**-4.64**
Mean										
(1987-2000)	8.41	11.51	9.40	9.08	7.96	8.49	9.04	9.24	9.68	8.13
(1987-1989)	9.69	15.84	9.42	8.16	8.13	12.33	5.19	15.40	6.38	5.48
(1990-2000)	8.07	10.33	9.40	9.33	7.91	7.44	9.81	7.55	9.98	8.38
Std. Dev.										
(19872000)	7.23	15.52	14.42	5.23	6.99	12.72	7.19	8.98	7.77	9.76
(1987-1989)	9.88	28.43	27.19	4.30	7.48	10.66	3.16	4.48	-	-
(1990-2000)	6.92	12.01	11.07	5.61	7.23	13.49	7.63	9.30	8.08	10.20
Compounded Annual Return										
(1987-2000)	8.18	10.56	8.53	8.96	7.74	7.77	8.94	8.88	9.42	7.73
(1987-1989)	9.38	13.68	7.24	8.10	7.96	12.00	5.16	15.34	6.38	5.48
(1990-2000)	7.86	9.73	8.88	9.20	7.68	6.64	9.65	7.19	9.70	7.93

* U.S. dollar-hedged.

Figure 4. **What a Difference Six and a Half Months Make!**
Sharpe Ratio: Comparision during the 1990s versus 1990 through July 15, 2000

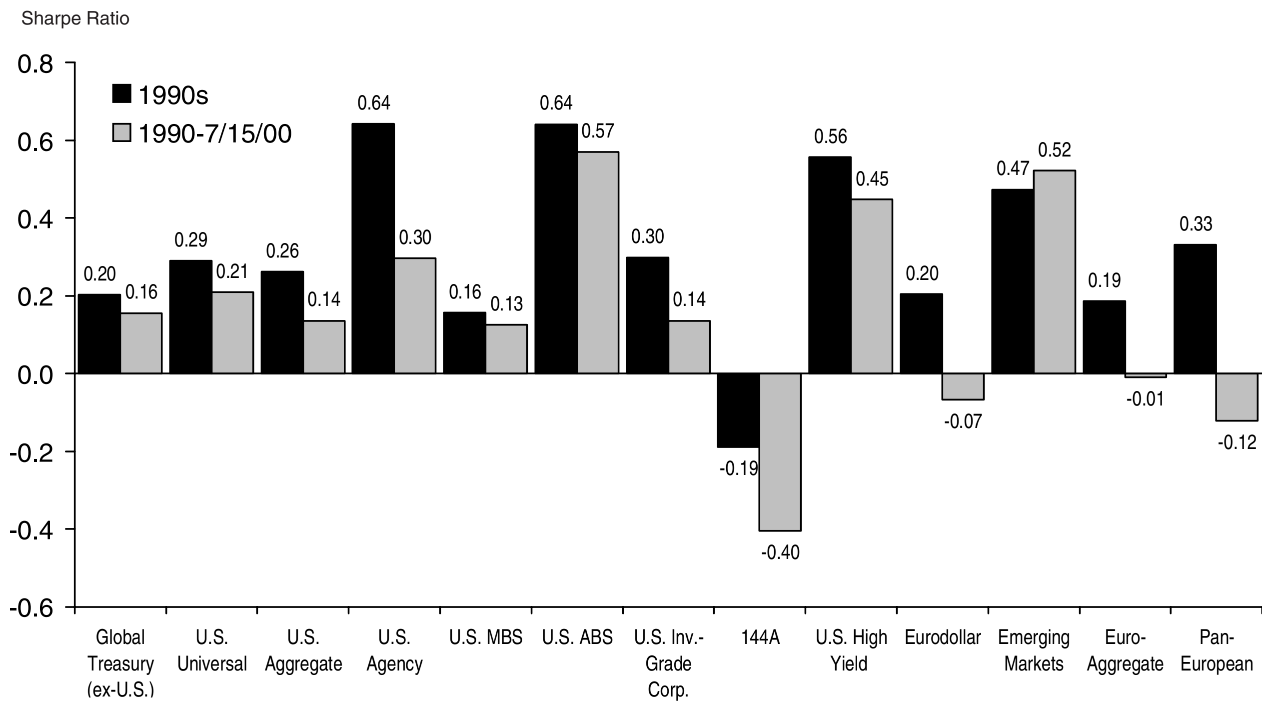


Figure 5. **Projected Composition Shifts of Key Lehman Global Family of Indices**
June 30, 2000 to January 1, 2010

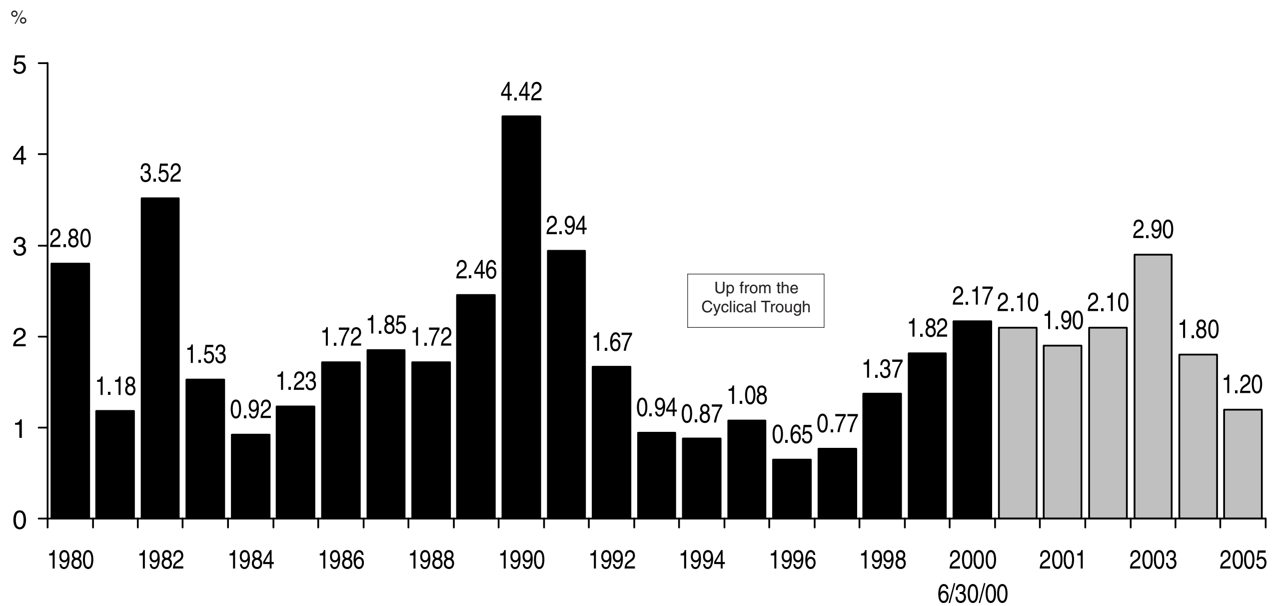
1990s Growth Rate (%)		6/30/00	% of Total	2000-2004 Growth Rate (%)	1/1/05	% of Total	2005-2009 Growth Rate (%)	1/1/10	% of Total
	U.S. Aggregate Index								
	U.S. Government	$2,224	39	-6	$1,654	25	0.36	$1,684	19
4.4	U.S. Treasury	1,676	30	-12	884	14	-7	615	7
8.4	U.S. Agency	549	10	7	769	12	7	1,069	12
	U.S. Collateralized	2,106	37	7	2,953	45	8	4,143	48
10.2	MBS Passthroughs	1,939	34	7	2,719	42	7	3,814	44
N/A	ERISA CMBS	83	1	8	122	2	8	179	2
1.8	ABS	84	1	6	112	2	6	150	2
8.9	U.S. Credit	1,308	23	8	1,929	30	8	2,837	33
	Investment Grade Corp.	1,124	20	8	1,652	25	8	2,427	28
	Sovereign & Supranat'l	114	2	9	175	3	9	269	3
	Foreign Agcy/Local Auth.	70	1	8	103	2	8	151	2
7.6	**Total**	**$5,637**	**100**	**3**	**$6,536**	**100**	**6**	**$8,664**	**100**
	U.S. Universal Index								
7.6	U.S. Aggregate	$5,637	86	3	$6,536	83	6	8,664	81
N/A	144A's	89	1	8	130	2	8	190	2
N/A	Non-ERISA CMBS	21	0	9	33	0	9	50	0
N/A	High-Yield CMBS	8	0	9	12	0	9	18	0
18.5	Eurodollar (ex-U.S. Agg.)	301	5	6	403	5	6	539	5
23.5	U.S. High-Yield	283	4	7	397	5	8	587	5
21.6	EMG (ex-U.S. Agg./Eurodollar)	221	3	12	390	5	12	686	6
	Total	**$6,561**	**100**	**4**	**$7,901**	**100**	**6**	**$10,735**	**100**
	Other								
4.8	ARMs	132		3	153		3	178	
8.0	U.S. Private Placement	67		4	80		4	97	
N/A	Pan-European Aggregate	4,498		5	5,740		6	7,682	
N/A	Global Reals	356		1	374		-1	350	
7.0	Global Tsy. (ex-U.S., ex-EMU)	2,349		12	4,139		4	5,036	
11.8	U.S. Municipals	708		3	821		7	1,134	

Figure 6. **Projected Composition Shifts of the Global Aggregate Index***
June 30, 2000 to January 1, 2010, Market Value ($ billion)

	6/30/00	% of Total	2000-2004 Growth Rate (%)	1/1/05	% of Total	2005-2009 Growth Rate (%)	1/1/10	% of Total
Global Aggregate Index	**13,546**	**100.00**	**6**	**17,982**	**100.00**	**6**	**23,926**	**100.00**
U.S. Aggregate	**5,637**	**41.62**	**3**	**6,536**	**36.35**	**6**	**8,684**	**36.30**
U.S. Treasury	1,676	12.37	-12	884	4.92	-7	615	2.57
U.S. Agency	549	4.05	7	769	4.28	7	1,079	4.51
U.S. Investment-Grade Corporate	1,124	8.30	8	1,652	9.19	8	2,427	10.15
Sovereign and Supranational	114	0.84	9	175	0.97	9	269	1.12
Foreign Agency/Local Authority	70	0.52	8	103	0.57	8	151	0.63
U.S. MBS	1,939	14.31	7	2,719	15.12	7	3,814	15.94
U.S. ABS	84	0.62	6	112	0.62	6	150	0.63
CMBS (ERISA-eligible)	83	0.61	8	122	0.68	8	179	0.75
Eurodollar	**301**	**2.22**	**6**	**403**	**2.24**	**6**	**539**	**2.25**
144A	**69**	**0.51**	**8**	**102**	**0.57**	**8**	**150**	**0.63**
Pan-European Aggregate	**4,498**	**33.20**	**5**	**5,702**	**31.71**	**6**	**7,662**	**32.02**
Treasury	2,808	20.73	2	3,100	17.24	3	3,594	15.02
Agency and Local Authority	323	2.38	5	412	2.29	6	551	2.30
Sovereign and Supranational	212	1.56	9	326	1.81	9	501	2.10
Corporate	570	4.21	12	1,004	5.58	11	1,692	7.07
Collateralized	585	4.32	8	860	4.78	9	1,323	5.53
Asian/Pacific Aggregate	**2,862**	**21.13**	**12**	**5,031**	**27.98**	**6**	**6,626**	**27.70**
Treasury	2,331	17.21	12	4,108	22.85	4	4,998	20.89
Agency	77	0.57	5	98	0.55	5	126	0.53
Local Authority	5	0.04	6	7.0	0.04	6	9	0.04
Corporate	421	3.11	13	775	4.31	13	1,428	5.97
Non-Corporate	28	0.20	9	43	0.24	9	66	0.27
Sovereign and Supranational	23	0.17	9	35	0.19	9	53	0.22
Foreign Agency/Local Authority	2	0.02	9	3	0.02	9	5	0.02
Collateralized	0	0.00	10	0.0	0.00	11	0	0.00
Canadian Government	**179**	**1.32**	**3**	**207**	**1.15**	**5**	**264**	**1.10**
Treasuries	**6,993**	**51.63**	**3**	**8,299**	**46.16**	**3**	**9,471**	**39.59**
Spread Sectors	**6,553**	**48.37**	**8**	**9,682**	**53.84**	**8**	**14,455**	**60.41**

* Assumes inclusion of Asian-Pacific Aggregate Index on July 1, 2000. Actual inclusion will take place on October 1, 2000.
Source: Dream Team Research.

Figure 7. **Moody's Downgrade/Upgrade Ratios: Actual Global Credit Quality Change**
1980 through June 30, 2000, and Projected through 2005



Sources: Moody's Investors Service and Dream Team Research.

Figure 8. **Excess Return Performance for Select Lehman Brothers Indices**

	U.S. Univ.	U.S. Agg	U.S. Agcy	MBS	ABS	U.S. Corp	144As	U.S. HY	Euro-dollar	EMG	CMBS Inv Grd	CMBS ERISA	CMBS Non-ERISA	CMBS HY
1990	-14	3	39	115	-	-177	-	-515	-	-	-	-	-	-
1991	95	50	51	9	-	229	-	1660	-	-	-	-	-	-
1992	7	-10	21	-104	72	97	-	552	-	-	-	-	-	-
1993	52	-9	49	-98	116	80	-	671	-	2489	-	-	-	-
1994	15	36	-17	97	54	58	-	258	-	-1209	-	-	-	-
1995	25	8	52	-44	43	114	-	57	52	857	-	-	-	-
1996	125	47	26	79	70	120	-	769	70	2293	-	-	-	-
1997	51	31	48	122	-12	-29	-	344	-58	439	12	27	-57	1508
1998	-208	-74	-44	-84	-83	-220	-532	-777	-74	-1619	-248	-192	-456	-2344
1999	217	81	42	113	137	177	340	479	85	2248	312	272	465	1415
2000 YTD	**-76**	**-68**	**-100**	**-29**	**-15**	**-222**	**-279**	**-514**	**-106**	**441**	**-104**	**-108**	**-88**	**202**
Monthly Statistics*														
Minimum	-248	-82	-82	-122	-84	-266	-474	-823	-101	-2788	-186	-170	-340	-2114
Maximum	116	68	43	85	109	204	375	674	65	902	284	258	386	635
Mean	2	1	2	2	4	1	-15	16	0	70	-1	0	-3	18
Std. Dev.	33	19	15	39	23	44	133	178	24	463	79	72	117	391
# of Observations	127	144	144	144	103	144	32	144	67	92	43	43	43	43
# of Positive Returns	81	94	93	89	74	82	15	81	39	60	24	25	24	31
# of Negative Returns	46	50	51	55	29	62	17	63	28	32	19	18	19	12
% Positive	63.8	65.3	64.6	61.8	71.8	56.9	46.9	56.3	58.2	65.2	55.8	58.1	55.8	72.1
% Negative	36.2	34.7	35.4	38.2	28.2	43.1	53.1	43.8	41.8	34.8	44.2	41.9	44.2	27.9

* Some indices began recording excess returns in August 1988 (Aggregate, Agency, Corporate, and High Yield).

Figure 9. **Correlation Summary Among Select Lehman Brothers Indices**
Monthly Nominal Returns: 1990-July 15, 2000

U.S. Agencies vs.:	MBS	ABS	Corp	HY	EMG	Tsy
1990	0.98	-	0.96	0.41	-	1.00
1991	0.83	-	0.94	-0.28	-	0.99
1992	0.89	0.91	0.99	0.05	-	1.00
1993	0.70	0.89	1.00	0.56	0.01	1.00
1994	0.94	0.90	1.00	0.73	0.44	1.00
1995	0.94	0.98	0.99	0.58	0.17	0.99
1996	0.98	0.98	1.00	0.66	0.43	1.00
1997	0.94	0.98	0.99	0.58	0.17	0.99
1998	0.91	0.92	0.71	-0.29	-0.48	0.99
1999	0.83	0.96	0.98	0.24	0.23	0.95
2000-7/15/00	0.96	0.99	0.96	0.46	0.89	0.86
1990-7/15/00	**0.91**	**0.94**	**0.96**	**0.31**	**0.16**	**0.99**

ABS vs:	Agency	MBS	Corp	HY	EMG	Tsy
1990	-	-	-	-	-	-
1991	-	-	-	-	-	-
1992	0.91	0.86	0.90	0.18	-	0.92
1993	0.89	0.77	0.89	0.67	-0.17	0.91
1994	0.90	0.88	0.91	0.78	0.43	0.91
1995	0.98	0.97	0.97	0.62	0.05	0.97
1996	0.98	0.98	0.99	0.73	0.49	0.99
1997	0.98	0.97	0.97	0.62	0.05	0.97
1998	0.92	0.99	0.84	0.01	-0.30	0.88
1999	0.96	0.84	0.96	0.30	0.24	0.90
2000-7/15/00	0.99	0.96	0.95	0.45	0.81	0.84
1990-7/15/00	**0.94**	**0.88**	**0.93**	**0.45**	**0.14**	**0.93**

MBS vs.:	Agency	ABS	Corp	HY	EMG	Tsy
1990	0.98	-	0.98	0.48	-	0.97
1991	0.83	-	0.76	-0.27	-	0.82
1992	0.89	0.86	0.88	0.00	-	0.88
1993	0.70	0.77	0.74	0.78	0.13	0.71
1994	0.94	0.88	0.94	0.81	0.43	0.92
1995	0.94	0.97	0.95	0.74	0.07	0.92
1996	0.98	0.98	0.98	0.68	0.39	0.98
1997	0.94	0.97	0.95	0.74	0.07	0.92
1998	0.91	0.99	0.81	-0.01	-0.30	0.87
1999	0.83	0.84	0.81	0.15	0.34	0.66
2000-7/15/00	0.96	0.96	0.89	0.41	0.81	0.80
1990-7/15/00	**0.91**	**0.88**	**0.90**	**0.39**	**0.24**	**0.88**

Corporate vs.:	Agency	MBS	ABS	HY	EMG	Tsy
1990	0.96	0.98	-	0.55	-	0.96
1991	0.94	0.76	-	0.01	-	0.93
1992	0.99	0.88	0.90	0.17	-	0.98
1993	1.00	0.74	0.89	0.60	0.03	0.99
1994	1.00	0.94	0.91	0.76	0.42	0.99
1995	0.99	0.95	0.97	0.62	0.19	0.99
1996	1.00	0.98	0.99	0.68	0.43	1.00
1997	0.99	0.95	0.97	0.62	0.19	0.99
1998	0.71	0.81	0.84	0.40	0.14	0.61
1999	0.98	0.81	0.96	0.40	0.31	0.95
2000-7/15/00	0.96	0.89	0.95	0.51	0.86	0.81
1990-7/15/00	**0.96**	**0.90**	**0.93**	**0.46**	**0.29**	**0.94**

High Yield vs.:	Agency	MBS	ABS	Corp	EMG	Tsy
1990	0.41	0.48	-	0.55	-	0.39
1991	-0.28	-0.27	-	0.01	-	-0.33
1992	0.05	0.00	0.18	0.17	-	0.02
1993	0.56	0.78	0.67	0.60	0.31	0.57
1994	0.73	0.81	0.78	0.76	0.40	0.73
1995	0.58	0.74	0.62	0.62	0.16	0.56
1996	0.66	0.68	0.73	0.68	0.66	0.68
1997	0.58	0.74	0.62	0.62	0.16	0.56
1998	-0.29	-0.01	0.01	0.40	0.79	-0.41
1999	0.24	0.15	0.30	0.40	0.46	0.31
2000-7/15/00	0.46	0.41	0.45	0.51	0.36	-0.03
1990-7/15/00	**0.31**	**0.39**	**0.45**	**0.46**	**0.58**	**0.27**

EMG vs.:	Agency	MBS	ABS	Corp	HY	Tsy
1990	-	-	-	-	-	-
1991	-	-	-	-	-	-
1992	-	-	-	-	-	-
1993	0.01	0.13	-0.17	0.03	0.31	-0.01
1994	0.44	0.43	0.43	0.42	0.40	0.45
1995	0.17	0.07	0.05	0.19	0.16	0.20
1996	0.43	0.39	0.49	0.43	0.66	0.45
1997	0.17	0.07	0.05	0.19	0.16	0.20
1998	-0.48	-0.30	-0.30	0.14	0.79	-0.53
1999	0.23	0.34	0.24	0.31	0.46	0.19
2000-7/15/00	0.89	0.81	0.81	0.86	0.36	0.85
1990-7/15/00	**0.16**	**0.24**	**0.14**	**0.29**	**0.58**	**0.12**

Treasury vs.:	Agency	MBS	ABS	Corp	HY	EMG
1990	1.00	0.97	-	0.96	0.39	-
1991	0.99	0.82	-	0.93	-0.33	-
1992	1.00	0.88	0.92	0.98	0.02	-
1993	1.00	0.71	0.91	0.99	0.57	-0.01
1994	1.00	0.92	0.91	0.99	0.73	0.45
1995	0.99	0.92	0.97	0.99	0.56	0.20
1996	1.00	0.98	0.99	1.00	0.68	0.45
1997	0.99	0.92	0.97	0.99	0.56	0.20
1998	0.99	0.87	0.88	0.61	-0.41	-0.53
1999	0.95	0.66	0.90	0.95	0.31	0.19
2000-7/15/00	0.86	0.80	0.84	0.81	-0.03	0.85
1990-7/15/00	**0.99**	**0.88**	**0.93**	**0.94**	**0.27**	**0.12**

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Figure 10. **Correlation Among Select Lehman Brothers Indices**
Monthly Excess Returns: 1990-July 15, 2000

Agencies vs.:	MBS	ABS	Corp	HY	EMG
1990	0.46	-	0.52	0.33	-
1991	0.27	-	0.75	0.62	-
1992	0.44	0.47	0.83	-0.03	-
1993	-0.11	-0.04	0.46	-0.40	-0.04
1994	0.55	0.03	0.60	0.06	0.23
1995	0.02	0.16	0.38	-0.37	-0.05
1996	0.38	-0.03	0.08	-0.62	-0.06
1997	0.02	0.16	0.38	-0.37	-0.05
1998	0.96	0.90	0.91	0.90	0.59
1999	0.81	0.75	0.78	-0.02	0.08
2000-7/15/00	0.90	0.81	0.88	0.86	0.39
1990-7/15/00	**0.46**	**0.57**	**0.65**	**0.32**	**0.23**

ABS vs.:	Agency	MBS	Corp	HY	EMG
1990	-	-	-	-	-
1991	-	-	-	-	-
1992	0.47	0.28	0.67	0.34	-
1993	-0.04	-0.03	-0.18	0.28	-0.10
1994	0.03	0.20	0.21	0.49	-0.18
1995	0.16	0.20	0.33	-0.16	-0.29
1996	-0.03	0.06	0.05	0.53	0.07
1997	0.16	0.20	0.33	-0.16	-0.29
1998	0.90	0.95	0.84	0.84	0.41
1999	0.75	0.58	0.75	0.02	-0.10
2000-7/15/00	0.81	0.65	0.70	0.91	0.17
1990-7/15/00	**0.57**	**0.42**	**0.70**	**0.59**	**0.23**

MBS vs.:	Agency	ABS	Corp	HY	EMG
1990	0.46	-	0.86	0.50	-
1991	0.27	-	0.57	0.50	-
1992	0.44	0.28	0.39	-0.09	-
1993	-0.11	-0.03	0.47	0.67	0.63
1994	0.55	0.20	0.43	0.52	0.10
1995	0.02	0.20	0.53	0.55	-0.10
1996	0.38	0.06	0.23	0.21	0.03
1997	0.02	0.20	0.53	0.55	-0.10
1998	0.96	0.95	0.91	0.90	0.55
1999	0.81	0.58	0.75	-0.07	0.15
2000-7/15/00	0.90	0.65	0.66	0.78	0.43
1990-7/15/00	**0.46**	**0.42**	**0.51**	**0.38**	**0.25**

Corporate vs.:	Agency	MBS	ABS	HY	EMG
1990	0.52	0.86	-	0.53	-
1991	0.75	0.57	-	0.93	-
1992	0.83	0.39	0.67	0.14	-
1993	0.46	0.47	-0.18	0.38	0.24
1994	0.60	0.43	0.21	0.33	-0.07
1995	0.38	0.53	0.33	0.54	-0.12
1996	0.08	0.23	0.05	0.16	-0.13
1997	0.38	0.53	0.33	0.54	-0.12
1998	0.91	0.91	0.84	0.92	0.78
1999	0.78	0.75	0.75	0.36	0.36
2000-7/15/00	0.88	0.66	0.70	0.77	0.34
1990-7/15/00	**0.65**	**0.51**	**0.70**	**0.68**	**0.54**

High Yield vs.:	Agency	MBS	ABS	Corp	EMG
1990	0.33	0.50	-	0.53	-
1991	0.62	0.50	-	0.93	-
1992	-0.03	-0.09	0.34	0.14	-
1993	-0.40	0.67	0.28	0.38	0.58
1994	0.06	0.52	0.49	0.33	0.03
1995	-0.37	0.55	-0.16	0.54	0.08
1996	-0.62	0.21	0.53	0.16	0.24
1997	-0.37	0.55	-0.16	0.54	0.08
1998	0.90	0.90	0.84	0.92	0.81
1999	-0.02	-0.07	0.02	0.36	0.33
2000-7/15/00	0.86	0.78	0.91	0.77	0.03
1990-7/15/00	**0.32**	**0.38**	**0.59**	**0.68**	**0.53**

EMG vs.:	Agency	MBS	ABS	Corp	HY
1990	-	-	-	-	-
1991	-	-	-	-	-
1992	-	-	-	-	-
1993	-0.04	0.63	-0.10	0.24	0.58
1994	0.23	0.10	-0.18	-0.07	0.03
1995	-0.05	-0.10	-0.29	-0.12	0.08
1996	-0.06	0.03	0.07	-0.13	0.24
1997	-0.05	-0.10	-0.29	-0.12	0.08
1998	0.59	0.55	0.41	0.78	0.81
1999	0.08	0.15	-0.10	0.36	0.33
2000-7/15/00	0.39	0.43	0.17	0.34	0.03
1990-7/15/00	**0.23**	**0.25**	**0.23**	**0.54**	**0.53**

Chateau Whistler

Lehman Brothers
Fourth Global Fixed-Income Capital
Workshop/Retreat
July 29-August 2, 2000

THE ASIAN-PACIFIC VIEW
Chief Asian Asset Manager:
Kentaro Kizu

9:15 p.m.
Monday, July 10, 2000

Dear Dream Team Colleagues:

Maria and I spent today together pitching a major Japanese plan sponsor (went very well; $500 million may be coming our way in October) and catching up on our regional strategic outlook. While still attired in today's visionary garb, I'll kick off the pre-Whistler correspondence.

Let me begin by conveying my "rational exuberance" about the prospects for the Asian-Pacific economy, asset management industry, and Dream Team business potential over the next decade. After nearly three decades in this industry, I have never been more bullish, even during the "go-go" mid-1980s.

This region will deliver the world's highest economic growth over the next quarter century. We have and will sustain the world's highest individual savings rates. Major corporations will move to fully funding their pension fund obligations. As shown in the U.S. and Europe, our increasingly well-educated and financially-sophisticated consumer base will disintermediate institutions with lackluster asset performance, such as the Postal Savings system in Japan, for better-performing alternatives. And perhaps because of the extreme volatility of the late 1990s, our institutional and retail investor base will continue to have a higher preference for the defensive safety of debt assets compared with the equity lovers in the U.S. and U.K.

My visionary glasses are not completely rose colored. In fairness, our region faces non-trivial challenges. My expectation of full Japanese economic recovery by 2004 means higher Japanese interest rates. The 10-year JGB easily can move from its 1.70%-1.80% range for much of 1999 and 2000 up to 3.00%-3.50%. This guarantees a year or two of negative returns for our largest regional bond market. This surely won't help Japanese debt versus equity tradeoffs and promises to consign Japanese debt to a chronic underweighting in global debt portfolios until its yield curve concludes its journey to higher ground.

To ensure this Japanese economic recovery, I can easily envision the yen declining to 130-140 per dollar by 2003. This likely currency deterioration will not help non-Japanese demand for Japanese fixed-income products and may further pressure the Japanese yield curve.

Several geopolitical risks could produce less smooth Asian capital markets. The welcome progress toward Korean unification proceeds along a razor's edge. A slow, stumbling unification risks renewed bouts of regional saber rattling, alarmingly from an unpredictable hermit state with nuclear weapon and missile technology. A quick, German-style unification could swamp the South Korean economy and even the Asian capital markets. And, relations between China and Taiwan are difficult to predict. Although the history of sovereign relations does not provide complete reassurance, I expect diplomacy and rationality to prevail and to ensure the continuation of the China-Taiwan status quo over our forecast period.

1. **Asian-Pacific Capital Market Outlook:** We need to be wary of generalizations about this region. This is a vast, culturally diverse area encompassing local economies at very different stages of development. Starting with Japan, the economic nightmare of the 1990s has finally ended. For the first time in a decade, economic and capital market prospects have finally brightened.

Unlike most Western economies, we do not envision an average of 3.0% GDP growth per year over the next five years; 2.0%-2-5% is more likely. Conversely, the Japanese economy will not plunge back into recession either. If our forecast proves incorrect, then we are too conservative. With sustained regional strength, Japanese economic growth may become more vigorous by 2003.

Institutional changes will be a constant across the Japanese political, economic, and market landscape. The pace will satisfy virtually no one. Local conservatives fret about the implications. Local progressives and non-local pundits lament the glacial pace. These institutional changes will benefit Dream Team. Corporate pension funds will have to steer toward full funding. The mix of debt security flows eventually will move toward more spread products as the banks resume their disintermediation (temporarily stalled by the negligible cost of short-term funds) and as the government deficit peaks and slowly retreats.

The 1999 economic resurrection of the Tigers boded well for East Asian growth and Dream Team prospects. The vigor of the V-shaped recovery provided a welcome positive surprise and offset much of the 1997-1998 damage. Still, there are lingering apprehensions. The brief, now-tabled eruption of the "hard-landing scenario" for the U.S. economy during the second quarter of 2000 instigated a flurry of "Asian double dip alerts." More likely, average East Asian growth of 5% will outstrip the U.S., Europe, Australia, and Japan through 2005. In turn, this should provide a fertile prospect-hunting ground for Dream Team, especially as we convincingly demonstrate our ability to manage assets in the local markets.

Consistent with their recent history, expect Australia and New Zealand's growth (3%-3.5% average) to reside between East Asia's and Japan's during the next half decade. We will continue to hunt for assets in these comparatively smaller markets.

Looking further down the road, we cannot neglect the likely arrival of bulging opportunities in China and India. Consistent with their ongoing economic and political reform (hopefully reality and not wishful thinking on my part) and ability to produce economic growth above the global mean, many Chinese and Indian organizations will be in a position to seek expert outside asset managers. Admittedly, this may become more prevalent during the second half of this decade. But I feel that we should begin more regular prospecting trips to boost our visibility to these potential clients.

2. **Dream Team's Competitive Position in Asia:** Dream Team has made an impression within the Asian capital markets since our debut in 1993. Yet with only $10.0 billion of assets, we cannot yet be classified as one of the major regional asset managers. As you know, we have entered into a strategic alliance with a medium-sized Japanese mutual fund. We need to form additional such linkages with regional financial institutions, especially Korean, Australian, Thai, Philippine, and even Chinese firms. Our competitive advantage resides in our use of superior technology compared with local firms, rigorous investment-management process, and our long-standing expertise in credit products and with bond indices. This branding has not been completely unique; many other U.S. and European firms have been making the same pitch to Asian clients.

3. **Asian-Pacific Asset Management:** My Western colleagues may find my views as bordering on heresy and

potentially squandering our competitive advantages, but I wonder if we would better served in this region by emphasizing traditional bond portfolio management. Many of our clients really do not understand relative value or excess returns (calculated by some subjective methodology). They much prefer currency risk to our espoused emphasis on credit risk taking. They are suspicious of bond index quality and often have little use for non-local benchmarks. They operate in the world of absolute returns and prefer to see our performance evaluated on a peer group basis as opposed to an unfamiliar index. Although showing up in increasing numbers to sit for AIMR's CFA program, the upper echelons of many plan sponsors often harbor a mild discomfort with the rising hegemony of Western capital-market techniques.

Never forget that this is an extremely conservative investor base. Outside of Latin America and Eastern Europe, Asian investors have been exposed to the highest equity-market volatility in the world over the past decade, especially during the past three years. With so much volatility risk in their equity portfolios, this investor base displays little tolerance for debt portfolio volatility. In recognition, our portfolio management style has differed from our Americas effort. We aim to produce highly consistent, modest outperformance to either a global treasury or local treasury benchmark. We take minor duration risk (within 5% of duration neutrality) and mainly use the classic credit barbell: very high-quality, short-dated spread product (out to 5-year maturities) blended with longer-dated government products. Where we have client permission, we will take small (10% or less) unhedged currency positions. Except for a small handful of clients, this region has a very limited appetite for U.S. high-yield corporate and non-Asian EMG debt products.

Our asset allocation practices differ from our U.S. and European colleagues. The scarcity of liquidity renders frequent intra-market asset allocation shifts among governments, corporates, and securitized products nearly impossible, even in major debt markets like Japan. As a result, our intra-market allocation re-alignments (if necessary) tend to be a semi-annual exercise at most and more likely an annual calibration.

There's still plenty to do within Asian debt markets. We have duration and curve-positioning controls available in the more-liquid government bond markets and the presence of some active derivative markets, especially for JGBs. The optimization of credit selection will be paramount to our portfolio success. With another wave of bankruptcies likely in Japan over the next 2-3 years, (as the government halts subsidies for non-economic ventures) and our nagging concern about the durability of the region's 1998-2001 recovery, we also worry about another high tide in regional corporate bankruptcies during 2001-2005.

Looking back, we placed too much trust in the accuracy of credit ratings during the 1990s. Given our rating reservations and concern that the quicker-than-expected non-Japanese economic recovery may have stalled some of the pledged market and corporate reforms, we intend to maintain our portfolio reticence toward smaller, less-liquid corporate borrowers in most markets. Instead, we will concentrate on a select group of the largest brand names like a Sony, Toyota, Mass Transit & Railway, China Light & Power. We especially welcome high single-A rated and above borrowers in yen from outside the region like General Electric, Deutsche Telekom, and Ford Motor. Finally, we will maintain our propensity to harvest high-quality yield in the securitized markets.

For example, the Australian-dollar MBS sector has gained critical mass and now holds appeal for regional portfolios.

This leaves regional and currency asset allocation decisions. In particular, inter-regional allocation will become more important, probably toward the end of our 2000-2005 forecast period. In particular, our European team has conveyed the sudden swell in investor interest in the Global Aggregate Index. With the new Asian-Pacific Aggregate Index (includes all investment-grade Treasury and spread products throughout our region) set to join the Global Aggregate Index on October 1, 2000, these indices will suddenly manufacture non-local demand (especially from Europe according to our London office) for Asian regional debt products.

This is an exciting innovation. But we shouldn't get carried away immediately. I've looked at the Asian-Pacific Aggregate Index. It's almost entirely Japan (95.6%). Even Australia has only a 1.7% share. Both non-local portfolio managers and we may not have to pay too much attention for a while to the minor representations of such local-currency markets as Korea, Malaysia, Taiwan, and China. Effectively, as with the pure Global Treasury Indices that have been around since the mid-1980s, our Japan portfolio call will largely determine whether we underperform or outperform this overall regional market.

On a broader basis, our major clients remain strong subscribers to global diversification. Hopefully, our Tokyo team can outperform in this region. As important, our teams in Europe and the Americas also will have to hold up their end of the global portfolio bargain.

4. **Suggestions:** Please forgive my regional and conservative biases, but I am convinced that the path to $300 billion and then $1 trillion of assets will wind mainly through Asia. By 2005, Dream Team should be aiming to quintuple our Asian-Pacific asset base to $50 billion.

   Thanks to the introduction of new index tools and the steady climb of portfolio globalization, our clients will increasingly look to global optimization across all debt capital markets. Our ability to offer "one-stop shopping" represents another major competitive advantage over regional-only managers.

   We cannot accomplish this goal alone. Maria and I agree that we will have to seek more joint ventures and to complete several acquisitions of regional asset managers (both mutual funds and plan sponsors). In particular, we need to tap into the Korean, Chinese, Singapore, and Australian markets.

   Even with some staff acquisitions through mergers, our vision clearly exceeds our current infrastructure. Although costly and tantamount to pre-funding our requirements, we need to begin adding and upgrading staff immediately. More than anything, we need more marketing and credit people to operate optimally in this vast region. Our currency and curve teams are sufficiently staffed.

   I think that Dream Team can be even more convincing in demonstrating its global reach to our increasingly globally sophisticated clients. With greater regularity, investors ask me and our team about conditions in the U.S. and European capital markets. Although we have weekly conference calls, I think that our investment process would benefit from the adoption of a quarterly investment committee rendezvous, rotating among our

major offices. My European colleagues haven't been to Tokyo in two years. I haven't been to Europe in almost 18 months. I think that we can get a lot more out of comparing notes in person about global capital market flows, investor/issuer themes, and portfolio management techniques.

See you at Whistler,

Kizu

THE EUROPEAN VIEW
Chief European Asset Manager:
Lars Veblen

3:35 pm
Wednesday, July 12, 2000

Dear Teammates,

Since 1997, we have been fortunate enough to be the fastest growing part of Dream Team. Including the $9 billion acquired through our consolidation with the European asset management arm of Colussus, our European assets bloomed from $5 billion to $25 billion. I'd think that we can triple to $75.0 billion by 2005, especially as the ranks of EMU swell to include Greece, Denmark, and Sweden. (The two biggest coming surprises through 2005: Switzerland will join the euro club; the U.K. will keep watching.)

Our game plan has been simple. Persuade the historically risk-averse European sponsor community (especially to credit risk) that we are credit masters. It's worked. In this new EMU world, currency and yield-curve timing have become passé in the minds of plan sponsors and consultants. For the moment, they have knighted credit as the preferred path to outperformance.

Our long track record in the U.S., especially with credit product, has been well received by existing and prospective clients. In particular, we have picked up market share from some European competitors who have sought to mask their lack of credit research staff by advertising their reliance on historical credit models. We also have capitalized on our expertise with asset allocation models, indices, performance/return attribution, and marketing.

While the road ahead looks extremely promising, the slope will be steep. Already, our early competitive advantages have begun to dissipate. Regional European managers have begun to forge alliances with U.S. firms. The same "masters of global scale" in the debt markets have boosted their marketing to plan sponsors and especially to consultants.

Meanwhile, I must confess to stylistic reservations. We have triumphed largely through our emphasis on "credit maximization." This worked especially well in 1999. Yet, the European credit markets remain less well developed than in the U.S. And although our forays into the Eastern European credit markets, especially Russia in 1999 and 2000, have been highly successful, we cannot bank on the continuation of such success.

After three years of optimistic forecasts by eager investment bankers, the embryonic Pan-European high-yield market stands at only $18.5 billion, equivalent to only 0.4% of the Pan-European Index on July 1, 2000. Portfolio diversification continues to be difficult. Governments constitute 68% of the Pan-European investment-grade choice set. Within the spread sectors, Pfandbriefe dominate the securitized market. In corporates, financial institutions (65%) and telecommunications (33% of industrials) are sectoral kings.

Since the launch of the Euro-Aggregate Index on July 1, 1998 through June 30, 2000, average credit quality has held constant between Aa1/AA+ to Aa2/AA. As our credit colleagues have regularly pointed out, European credit quality inevitably will fall. With some European issuers ultimately sacrificing their ratings on the altar of diversification/acquisition, the European credit markets probably will feature a high-single A rating by 2005. Accordingly, I don't think that we should completely forsake our duration/curve/current positioning tactics just yet.

As you know, European interest rates have not completed their upward cyclical rebound from their spring 1999 troughs. Looking beyond their early 2001 peak, I envision rate stability during 2001 and 2002. Past 2002, rate directionality naturally depends on inflation risks. Trying hard not to be a "seer of the moment," I am optimistic about European growth during the first half of this decade. In turn, European rates could well climb another leg of the ladder in 2003.

I've listened with some amusement to our U.S. team complain about liquidity during the past three years. Welcome to the European club. Even in a purportedly over-brokered market, we've been in this wave-driven liquidity boat since the inception of Eurobonds in the mid-1960s. Ironically, dealer proliferation has suppressed trading margins and persistently curbed risk taking. We have witnessed repeated liquidity droughts, even in high-quality products like floaters.

With so many new "credit disciples" in Europe, I can get very worried about the credit market's ultimate reaction to the inevitable next recession. With European growth charging toward 4.0% in 2000 and possibly higher in 2001 thanks to cheap currencies and an upcoming stream of major tax cuts, a major credit debacle is unlikely to swamp our portfolios through 2001 and probably 2002. Nonetheless, I'd assign a high probability to at least one major European growth and credit market squall by 2005. Our chief priority will be to try to anticipate and to minimize the potential portfolio pain.

As in the U.S., I am convinced that we have to sell our European clients on the long-run merits of "global diversification." I am a true believer. Despite convergence, regional economic and credit cycles will not be fully harmonized by the end of this decade. Global portfolio flexibility can positively enhance risk-adjusted returns in the debt markets. And more and more, we are preaching to European corporate behemoths with multi-continent businesses. Consider such cross-border consolidations as Daimler/Chrysler two years ago as well as Deutsche Telekom/VoiceStream and Vivendi/Seagrams in 2000.

Our investment processes can be improved. I think that we should continue to underscore our credit expertise. Emulating what's already taken place in the equity markets and even at the major rating agencies, we need to move away from the "regional silo approach" and toward the construction of "global industry teams." For example, there are singular global oil, auto, airline, insurance, technology, and telecommunication industries. Some regional differences persist for banking, consumer finance, and electric utilities, et al. The global approach would be even more beneficial for structured products.

Ironically, with so many investors pledging their methodological allegiance to credit, I think that we would be well served to step up our investigation of the contributions of currency overlay, yield curve, and derivatives (especially credit derivative) to our portfolio activities. For example, most of us envision a stronger euro (1.10 U.S. dollars per euro) by the end of 2001 as economic growth/interest rate differentials narrow to the U.S. Despite the admitted misperformance of the euro since its birth, we commend this strategy to our clients.

Although global capital markets are not yet completely congruent, we need to boost our collaboration among our regional teams. Our efforts should not be restricted to deriving the most accurate market forecasts; we need to consult on methodology as well. For example, the U.S. team apparently holds yield-curve barbell trades in higher esteem than their European and Asian colleagues. For some reason, the practice of portfolio yield enhancement by the

underwriting of default options on high-quality credits has not been fully embraced in the U.S. On the other hand, despite the frequent insistence by New York, London and Tokyo cannot pretend to have fully accepted the practice of capitalizing on "index dynamics." Through their mastery of pro forma index changes, our U.S. team claims an annual head start of about 50 bp over their benchmark. London and Tokyo can partially hide behind the newness of our regional benchmarks and the thinness of their markets. In reality, we have yet to spend enough time on these practices. This must change.

A pet European peeve: shouldn't all of our regional teams be thinking about a consistent view on the periodicity of asset allocation shifts? With the apparent decline of global liquidity in the debt markets, which I doubt will show much improvement over the next 2-3 years, the drag of transaction costs limits our substantive allocation shifts to 3-4 per annum at most. Although bid/offer spreads are tighter than in the credit markets, I sometimes question from afar the activities of our U.S. managers in the MBS and agency sectors. Have 12-20 allocation shifts per year between vol product and Treasuries consistently added value, or are you overtrading?

Finally, let's be honest. Our investment decision-making process is quantitatively light, mainly consisting of running multiple scenarios and the deployment of a rather simple optimizer for each scenario. Our system does not handle newer segments of the global debt markets, like the Asian-Pacific region, and does not even cover some of the spread sectors, such as EMG, European corporates, and Asian corporates. Since the mid-1980s, our industry has split the atom on term structure modeling, fixed-income option valuation, and multi-currency optimization (sounds great, but who's gotten this 100% correct?). The industry hasn't done as well developing intra-sector and inter-sector allocation tools, especially across the currency and credit spectrum. Have any of you seen a paper on how best to compare the merits of investment-grade Japanese corporates to equivalently related U.S. and European corporates?

The poverty of historical data provides a partial excuse. With new European and Asian credit indices sprouting up on a monthly basis, the data excuse will soon be extinct. In my view, the victors in the race to build the first truly multi-asset class, multi-currency, global debt asset allocation model also will stand in the asset-accumulation winners circle in 2010. Let's be the first!

I look forward to spending quality time with you at Whistler and expect to absolutely trounce Scott on the golf course.

Yours truly,

Lars

Chateau Whistler

AMERICAS
Chief Americas Asset Manager:
Amitab Varadhachary

11:15 pm
Saturday, July 15, 2000

Fellows,

My views on the U.S. economy and capital markets are well known to all of you. Forgive me for not dwelling at length. As you know, my holdout's over. I'm now a card-carrying "New Paradigmer."

Over the next five years, U.S. inflation might peak briefly in the low 3% range before retreating. Technology has killed inflation in our largely service economy. The U.S. business cycle has been completely tamed by the Fed and benign fiscal policymaking by the Treasury and Congress. Barring a geopolitical event, recession looks highly improbable over the next half decade. As in 1994 through 2000, the Fed will move short rates up and down within a 200 bp range. Long rates will fall to 5.0% because of the scarcity of U.S. Treasuries which will vanish by 2010. This means a chronically inverted U.S. curve for as far as we can see, probably for the next ten years. Spread movements will become more volatile than curve movements as the hypersensitive credit markets persist in overreacting to new information in the pursuit of outperformance. The dollar's continued strength will surprise my Asian and European colleagues. The euro will never cross 1.10 by 2005. U.S. bond returns will average 6%-8% for the first five years of this decade. Altogether, not a terrible environment for U.S. debt assets.

If our Asian and European teams reach their total target of $125 billion in 2005, this means our U.S. assets must grow from $64 billion to $175 billion to meet Maria's $300 billion goal. Without another major acquisition or a series of smaller acquisitions, this looks like an extremely tall order. Just think, $111 billion in five years and at a time when major institutional investors and individual investors alike have fallen head over heels for equities. As always, our Americas asset management team will do its best on performance side. If we reach this goal, then we'll have to hold the party of all parties for our marketing team. And those guys know how to party!

We all cherish growth. Yet, to raise a maverick question, should the most rapid expansion of our asset base be our main priority over the next decade? Haven't the macro hedge funds taught us a lesson during 1997-2000? Perhaps there are "scale ceilings in the market"? Haven't we all heard the groan of infrastructure constraints at Dream Team, especially during an era when so many talented youth prefer to chase their dreams in the technology world or in equities and investment banking? Lars, without breaking our compensation scheme, do you really expect to hire and to maintain an experienced credit staff in Europe to handle $75 billion of European debt products?

Thinking of retailers, swift, sloppy expansion can last for a while. Ultimately though, such organizations flounder in their own mediocrity. Let's grow, but at a reasonable pace.

I think we need to think carefully about our strategic mission. We really need to broaden our product line. At the same time, our industry is undergoing major transformation.

We are not really sure about the portfolio implications of the e-conversion of the primary and secondary markets, the likely full conversion to swaps benchmarks, and the unfolding dominance of the global debt markets by non-governmental issuers.

Most profoundly, I think that our menu of debt asset classes exceeds our experience. We don't have long-term time series on spread products in the euro capital markets, record keeping has just begun in segments of the Asian and Pacific debt capital markets, most local EMG bond markets remain unmapped, and a statistically rigorous risk model exists only for the investment-grade segments of the U.S. dollar market.

And exactly what's our investment style? Sure, we want to outperform. How? Hasn't the "Boston Philosophy (duration clustering, spread-sector timing (usually overweighting), and judicious issuer selection) become a bit tired?

So, let's be honest; what should our style be? We have more data than ever before. Yet, stylistically, I'm not sure that we've evolved as much as we pretend from our 1980s style of "got a hunch, bet a bunch."

In hopes of challenging our thinking to come up with a better investment model and not sounding too cynical ("the assimilation and positive reaction to constructive criticism is the first step on the path to improvement"), I offer the following observations about investment processes based on my three decades of service in this wonderful industry.

A) Goal of Debt Asset Management: We need to reflect on our philosophy. In theory, we are trying to move closer to the efficient frontier. In practice, Dream Team has marketed an average of 100 bp per annum over the U.S. Aggregate Index with moderate tolerance for annual shortfall. What's our outperformance goal for the Euro-Aggregate Index, Global Aggregate Index, and Asian-Pacific Aggregate Index? Based on their newness, we don't really have the capability of setting an accurate goal yet.

As our scale climbs over the next decade, are these realistic targets? Or will we have to lower our sights as the capital markets presumably become more efficient and possibly more liquid?

Dream Team has always been and will always be an active manager. But if the management fees were equivalent, I wonder if we wouldn't think more seriously about a version of enhanced indexing, that halfway point between active and passive management. Looking back and perhaps caught with the same enthusiasm as their "cowboy cousins in equity management," some debt managers have really gotten carried away in looking for big plays. More often than not, these folks also have gotten carried off the field. A radical thought for Dream Team: the true long-term survivors in our field will be enhanced trackers. Unless embedded in a smaller firm, the aggressive active managers will detonate.

B) Currency Stands: Our late, venerable founder, Warren Homer, would be twisting in his grave if he could hear the suggestions of some our team to seek alpha through the slogan of "multi-currency optimization." We began in 1957 and prospered as a manager of U.S. debt assets only. Even in his retirement speech in 1988, Warren counseled against "currency adventurism." Since we jumped beyond our dollar boundaries in 1990, I'd say that our batting average is about 50% on unhedged currency positions. Where's the alpha in this kind of almost primitive portfolio experimentation?

I absolutely subscribe to our expansion in the non-dollar debt markets. Within each major currency zone, we can and should offer our services to exceed the targeted benchmark. And I have no problem blending all of our efforts in multiple currencies to offer a "fully

currency-hedged product." But I abhor the almost random, subjective deployment of partially hedged currency positions. Possibly, Dream Team is just not that good at currencies. Alternatively and my belief, the vast currency markets are so efficient that we have absolutely no business trying to take medium-term and long-term stands against the legions of day traders, commercial banks, legitimate corporate borrowers, and hedge funds operating in the currency markets.

Finally, I have to be critical of the challenging economics profession. But the forecasts of the major currency crosses collectively have been atrocious over the past three years. The flailing Japanese economy was supposed to weaken the yen in 1998 and 1999. Of course, the converse occurred to the distress of many a currency punter. The euro was expected to soar to 1.25 per dollar in 1999. Instead, the euro broke the buck. Would anyone at Dream Team now be surprised at 0.83 or 1.09 on August 1, 2000? Do you feel strong enough to stake our entire relative performance? I think not.

C) **Duration/Yield Curve Positioning:** Think about our real methodology. I think that we are better than most, but we are mainly "central bank trackers," "government issuance followers," and "economic data release bettors." Most of our medium-term tightening and easing trend tracking has been on course. Yet, this hasn't really benefited our portfolio too much. With the increased transparency of central banks and the improved survey techniques of various newsletters and even the bond columns in financial media, there are fewer surprises.

Can we really pretend to long-term superiority in economic data release betting? There are questions about the accuracy of many data series in the U.S. Effectively, this leaves us taking a stand on a potentially flawed number. Here again, wouldn't this best be left to the province of "tick traders" operating in the Chicago pits?

Government issuance tracking has been helpful, especially during the past year. We didn't get the inversion of the U.S. curve completely correct. But we weren't hurt as badly as some of our competitors.

On yield curve position, we do an excellent job of static analysis. Through scenario analysis techniques resident internally since the early 1980s and by looking at volatility along the curve, we usually can calculate the optimal positioning for an invariant or parallel shifting curve. We haven't done as well when the yield curve dramatically twists. And we certainly don't predict volatility very well.

Thanks to the onset of the Asian Contagion in 1997, the dawn of EMU and the credit asset boom in 1999, and the slippage of outstanding U.S. Treasuries beginning in 1998, Dream Team, other managers, and even the markets have had something of an "infatuation with credit assets." This tendency was reinforced by inconsistent performance in duration/curve positioning during the 1990s. Yet, duration and curve positioning will always be paramount investment decisions for our asset managers. I think that we can and have to do a lot better. Ironically, with so many managers in pursuit of credit gains, I can't help but think duration setting will play an even larger role in differentiating managers.

D) **Asset Allocation:** Given our expanding global reach, Dream Team must improve the efficacy of our asset allocation decisions. But thanks to the usual limitations

on historical data (index measurement of some asset classes has just materialized in 1998 and 2000), we have more questions than answers. With Perfect Foresight and Imperfect Foresight studies, we know that individual issuer selection means more in the U.S. investment-grade market than sector allocation. Based on our experience, we've known this for decades. We just didn't know the magnitudes. We haven't completed this analysis yet for the high-yield corporate and EMG sectors, though we expect to find an ever-greater reliance on the superiority of issuer selection over intra-sector allocation.

Until liquidity meaningfully improves in the U.S. dollar markets, we need to limit our asset allocation adjustments to only substantive expected return-transaction cost portfolio gains. Given the variation in transaction costs across asset classes, we can range from 3-4 timing switches per year in the credit sectors to possibly 6-7 switches per year in agencies, MBS, and even Treasuries.

Especially in the investment-grade spread sectors, the portfolio advantages of frequent inter-sector allocation adjustments have declined since the mid-1990s, given the de facto emergence of a "universal investment-grade spread sector." Effectively, with correlations among ABS, MBS, U.S. agencies, and investment-grade corporates often running at 0.90 and above for nominal returns, these sectors have been moving in lock step for some time. For the past two years, it's been rare to see a week when MBS and corporate spreads move in opposite directions.

We do not propose the "red lining" of asset allocation within the U.S. dollar markets. Year-by-year, excess returns and Sharpe ratios have differed greatly given the very different spread volatilities of each asset class. In general, the vol sectors (MBS, U.S. agencies, and ABS) offer steadier performance but with more limited upside and downside. In particular, we do not fully understand the persistence of the ABS spread premium to riskier corporate assets of similar quality. The credit sectors, investment grade through low quality, really differentiate overall portfolio performance. The wrong credit sector allocation can add or subtract hundreds of basis points per year.

Potential intra-sector allocation decisions abound throughout the U.S. debt markets. From the conventional/GNMA axis in MBS, cards/auto finance/utilities/manufactured housing/home equity loans in ABS, to nearly 80-separate industry classifications for the credit sectors, three major regions in dollar EMG debt (Asia, Latin America, and Eastern Europe), and even the special situations in the U.S. municipal, preferred stock, and convertible security markets, there are dozen of allocation decisions to be rendered. And thanks to the increasing acceptance by plan sponsors of "relative performance" as measured in excess return units, the correlations among asset classes actually shrink by almost 50% in some instances as shown in Maria's enclosed exhibits (e.g., the correlation coefficient for MBS/U.S. agency excess returns is only 0.46 from 1990 through July 15, 2000; for nominal returns over the same period, this coefficient stands at 0.91). Overall, I think we've done a good job. But I think that we can do better.

E) **Structure Selection:** U.S. debt markets contain much greater structural diversity than Asian and European capital markets. We view this diversity as an advantage that plays to the strength of our experience and research. In addition to a vast array of callable structures

thanks to the mortgage agencies and the utility segments of the corporate markets, we choose to add or subtract yield based on the seniority of the debt structure within the issuer's capitalization. For the most part, we have traded immediate liquidity (overrated anyway for investment-grade issuers) for incremental yield.

F) Structured Credit Products: We need to get more clients to amend their constraints. I was not a fan of the structured notes of the early 1990s. But index swaps and default options have their place as both risk management and minor yield enhancement tools. We think nothing of using derivatives to modify our duration or to use futures to replicate indices for short intervals. We need to get to the same place with credit products.

G) Swaps/Benchmark Transitions: Long term, this is much ado about nothing. Still, we can expect a small mountain of literature on the "perceived" realignment of relative value among asset classes. If need be, we can bench off the price of cocoa futures. The U.S. bond market operated without a long U.S. Treasury bond from the late 1950s to April 1977. Of course, the volume of secondary trading in this pre-total return era looks paltry in comparison to current trading volumes. Still, we can easily cope without a long Treasury, especially when most new issuance comes into the intermediate sectors anyways. After long resistance, our team finally concedes the advantages of using LIBOR as a multi-currency common denominator. Given our evaluation by clients in fixed-rate space, the use of LIBOR or swaps benchmarks is unlikely to meaningful change our asset allocation practices.

Barring a major recession and the repeal of all taxes, the proportion of spread products will increase in the U.S. markets over the next decade. In the late 1970s and early 1980s, we used to fret about the "crowding out" of private borrowers from the capital markets by exploding U.S. Treasury issuance. Ironically in 2000, we worry that "reverse crowding out," the fall in U.S. Treasury market share, will have the same expansionary influence on equilibrium spreads as "crowding out." There's something wrong with this asymmetry. In our early view, equilibrium spreads may prove more resilient than current conjectures just as in the 1980s.

H) Coping with Index Innovations: There will be adjustment growing pains, but we should be delighted by the introduction of the third generation macro indices and actively encourage the earliest possible publication of the fourth-generation macro indices (the European Universal, Asian-Pacific Aggregate Universal, and the Multiverse Index). Large-scale firms like Dream Team are the natural beneficiaries of these new indices. Regional core-only managers may become an endangered species given their inability to provide one-stop, multi-asset class, multi-currency portfolio management services.

In the U.S., the move from the second-generation U.S. Aggregate Index to the U.S. Universal Index continues to gain momentum. Initially, we feared that the adoption of the U.S. Universal Index would drive down our portfolio outperformance target given the higher yield of this new macro index. Actually, it helps us through the inclusion of assets (high-yield corporates and EMG) with lower correlations to investment-grade assets.

The Global Aggregate Index also has engendered curiosity among U.S. consultants and clients. Especially with the rise of spread product and fall of government debt market share and subscribing to con-

gruence between a portfolio choice set and an index, the Global Aggregate, through its inclusion of spread products, appears to be a more appropriate multi-currency index standard than a Global Treasury Index.

We do not fully understand the desire of our European team to convert the Global Aggregate into a large-cap only index, partially to ensure full investability for every included issue and partially to limit the Japanese market share. In the U.S., we'd rather maximize Japanese market share. Given the likely negative returns in the Japanese bond market at some interval during 2000-2002, a simple near-term policy of just underweighting Japan almost certainly would lead to outperformance versus the Global Aggregate Index. And we'd rather have a broad sample of an underlying asset class population. The liquid/non-liquid decision is a part of the investment management process. We'd be reluctant to part with this information through the construction of a large-cap only index.

I) **Flawed Data Inputs:** Charitably, internal and external inputs to our decision-making could be improved. Economic forecasts are clustered; trend turning points are missed more often than predicted. Sell-side credit research has taken on a "positivist equity-research bent." We are bombarded with daily missives pointing out "buying opportunities." Has anyone at Dream Team ever seen a "selling opportunity" recommendation other than for currencies or duration? The rating agencies are well intentioned and have improved over the past decade. But they still lag. Alternatively, some of us subscribe to "independent credit newsletters," where every single recommendation happens to be totally negative. Is there a balanced credit research product anywhere?

Industry modelers have some homework. Development and upgrades often significantly lag new academic techniques and data. There's a constant misuse of historical data. Conclusions, like mean reversions, are often totally dependent on the timing of the start of the study period. We call this the "-est phenomenon": spreads/values are the widest/tightest/cheapest/richest/largest in history. This is seldom true.

And strategists can be completely consumed by "top down, macro land." Sometimes, we think that Peter Lynch may have been right, just pick the right names and don't worry about the economy.

Suggestions: At our offsites, our incredibly able group usually generates a surfeit of terrific ideas. But let's think back to the actual follow-up. Often, we end up talking about the same issues for several years before someone gets around to acting. Before we break, let's try to prioritize our ideas and to set a timetable for their execution. If we implement 75% of our ideas, we'd be the best and largest asset manager in the world.

Cheers,

Amitab

CREDIT RESEARCH
Global Credit Research Director:
Vadim Gold

7:15 a.m.
Tuesday, July 18, 2000

To Whistler Attendees:

The maximization of the credit function has never been more essential to the portfolio success of a growing asset management firm like Dream Team. Concurrently and perhaps surprisingly at the height of this global economic/credit cycle, the maximization of the credit function has never looked more challenging to our credit research crew at Dream Team.

I know what you are thinking. In probably every academic field and business, each specialty probably views its contributions as paramount to the advancement of the entire field or firm. This quest for supremacy is especially evident in our highly- competitive capital markets industry. And more cynically, the credit crew has begun an early bonus drive. Not true. We've never had more credits to follow. And we've never felt as accountable to the likelihood that a bad call or two could spoil our entire annual performance and certainly our careers at this terrific organization.

Outlook for the Credit Markets: At present, I'm a bit worried. I guess you can say that any good credit professional should always be a bit worried. But recall, our credit team was completely convinced in 1991 and 1992 that better times lay ahead. And although our knees briefly buckled in August 1998, we rapidly concluded that another "Great Depression" was not in the immediate offing. Our mid-September 1998 suggestion to boost allocation to credit assets contributed to our blockbuster performance during the fourth quarter of 1998, our best quarter ever.

We completely concur with the investment committee's late May 2000 decision to overweight credit assets. Currently, credit assets in the dollar zone look compelling. Generically, credit appears to be trading fair value to slightly cheap in European currencies. Yen-denominated credit securities are on the rich side.

Looking beyond the next six months, we have six concerns. First, thanks to the galloping pace of global merger & acquisitions, we have never had a lower rate of confidence in the sustained credit quality of individual corporate issuers. The firm that we own or buy today has a descending probability of keeping its current form over a three-year interval, let alone for the now standard five- and ten-year maturities in the corporate bond market. Firm and industry structures are rapidly evolving, usually producing credit effects (admittedly some are positive, but negative consequences are more prevalent). Our credit team cannot possibly forecast exactly these corporate permutations. At a time when our portfolio managers are pushing to layer in additional credit product, especially in the European capital markets, they do not want to hear our speculative ruminations about an individual issuer's consolidation/restructuring risk.

To this classic "event risk" (more widespread in the early 21st century but less pernicious than at the peak of the Drexel high-yield era of the mid-to-late 1980s, when some investment-grade issuers tumbled to speculative-grade ratings overnight), corporate debt investors also are exposed to chronic equity buybacks. In an attempt to bolster their standing in the equity markets and to validate the benefits of the growing distribution of stock option awards to their employees, issuers regularly exceed the patience of the rating-agency balance sheet police. These rating rebukes typically are mild, a notch or two at most. But if these notches cascade a credit from Aa3/AA- to A1/A+ or, more importantly, from A3/A- to Baa1/BBB+ with an attendant

dip in commercial paper ratings to P2/A2, then our portfolio feels the pinch.

Second, the acceleration of technological change will re-sort the intrinsic creditworthiness of many industries and many issuers within industries. As with event risk, I wish that I could lay claim to a solid forecasting model. No such model exists. We are confined to classic credit methodology: read all of the issuers' financial statements; listen to their conference calls; and ask them about their vulnerabilities and plans to cope with technological change. We also must avoid the rush to judge. A year ago, the popular media prophesized the cannibalization of conventional retailers by e-tailers. Today, it's the other way around. In reality, we still do not know the fate of the retailing industry. Similar technological clouds hover over nearly every industry.

Third, in this golden time of plenty, we are beginning to fret about "good old-fashioned cyclical credit risk." In my view, this concern is premature. Per our economics team, global growth prospects look terrific in 2000 and 2001. Global corporate profitability should continue to climb. Yet, this is exactly the time to prepare for the likely next cyclical downstroke of the global economic/credit cycle.

Fourth, we worry about swift industry paradigm shifts. Thanks to global competition, industry profitability, credit, and market standing cycles have shortened over the past decade. U.S. and European financial institutions went from "portfolio non grata" in the early 1990s to "portfolio jewels" by the mid-1990s.

Looking ahead, our strategic warning radars have locked on industries like airlines (a coming capacity, building, surplus problem?), U.S. electric utilities (from overbuilt to underbuilt, another large base load construction cycle ahead?), and telecommunications (spending too much for bandwidth, market share, and acquisitions?).

Fifth, there have been vast institutional changes in debt trading methodology that heighten our vulnerability to credit noise and render more difficult the relative value function performed by our credit research team. Under the weight of tighter risk controls, credit traders have migrated to an "equity-style" of adjusting marks to every issuer development, no matter whether this new information carries any real fundamental or rating import. For example, we find ridiculous minor spread expansions emanating from issuer earnings "disappointments," where earnings are still up, just not as high as the forecast. This is absolutely not a real credit event.

Sixth, in a continuation of a two-decade trend, we believe that rating agency philosophy will continue to evolve toward shorter, choppier rating cycles. To bolster their market utility, the agencies understandably do not have any intention of repeating their previous generosity in some regions (e.g., pre-1997 Asia). In our view, the global economy and credit markets have returned to their loftiest perch in mid-2000. As confessed non-subscribers to the "theory of business cycle repeal" promulgated by some economists, we worry that the rating agencies will be wielding their ratings swords across wide swaths of the issuer universe at the slightest hint of a descending global economy.

Credit Function in the Asset Management Industry: In an era of fee pressure, we all recognize the need to contain our costs. But if we really are going to triple the assets under management over the next half decade, and if the total global count of potential issuers in the credit markets rises from the current 5,000 to the 10,000 projected by some Street sources, then my global team of six credit analysts is much too lean.

We should plan to at least double my staff. In particular, we need to build out our Asian and European credit functionality.

This will be a difficult task. There's a dearth of reasonably priced talent. We need to boost our compensation packages and implement a program of bringing on board a combination of junior staff and credit professionals from traditional organizations like the rating agencies and commercial banks.

Assessment of Dream Team's Credit Function: Especially with our new mandates to operate a portfolio against the Global Aggregate Index, we are dangerously close to being overwhelmed by the magnitude of the global credit choice set. And with the Global Aggregate Index about to include the new Asian-Pacific Aggregate Index on October 1, 2000, our portfolio managers imminently will be hounding us for a recommended list of Japanese, Australian, Korean, Malaysian, Taiwanese, Hong Kong, Chinese, and New Zealand corporate issuers. For the immediate future, we will have to stick to handful of the largest credits.

Even with our internal development and subscription to various credit screening tools, we must regrettably admit the incidence of opportunity cost. They are likely hordes of reasonable credit selections that we must take a pass on because we don't fully trust the 5-minute, rating agency, Bloomberg sketch approach. Perhaps generalizing too much from our own experience, this growing credit analysis bottleneck goes a long way toward explaining the persistence of the observed spread premia for on-the-run versus off-the-runs.

Consistent with the growing hypersensitivity of the capital markets to credit shocks since 1997, we have tried to adjust the philosophy of our credit team to emphasize defense over offense. Fortunately, we have managed to miss almost all of the major credit casualties during the past two years. As shown by a small holding of Rite Aid, our record's not perfect. We have yet to develop a consistent technique to see through bogus accounting practices.

This defensive tilt in our credit philosophy has prompted several cases of understandable aggravation among our portfolio managers. Looking back, our conservatism and our lean staffing delayed our participation in high-yield energy credits until oil prices topped $25.00 per barrel. Street credit research was entirely correct in issuing a strong buy on the energy sector. But consistent with our long-term operating guidelines, we cannot rely solely upon the assertions of dealer credit research, especially given the potential for an "axe-driven conclusion." We have to complete our own verification in the energy sector. In another recent case, despite the assurances directly from the issuer, we doubted the possibility of Moody's March 2000 upgrade of Mexico just four months prior to a general election. Admittedly, such calls have produced portfolio opportunity cost.

Key Recommendations: 1) Our key regional asset managers see credit maximization as the prime route to outperformance. Great. We need to double our staff as quickly as possible. Currently, we are not in a position to authorize new credits to our portfolios quickly. As a result, we have missed some rebound plays. Worse, our stretched staff may miss the initial signs of deterioration in some instances. Unquestionably, our portfolio credit risk has gone up. 2) We need to invest in credit investment technology. For example, equity analysts and asset managers already are testing post-HTML web software, XML and XBRL. Reportedly, this will allow us to completely download all key financial data from any issuer without incurring the usual three-month lag from issuer to database firm. To complete our global credit coverage, we should subscribe to the best credit-screening service in each region. We should view these subscription costs as a small insurance premium for the incremental protection acquired.

Rigorously yours,
Vadim

QUANTITATIVE RESEARCH
Global Quantitative Research Director:
Mary Sullivan

6:27 pm
Wednesday, July 19, 2000

Dear Fellow Travelers:

Some thoughts:

1. Generalized Improvement in Quantitative Techniques: Our profession has accomplished much over the past two decades; debt asset management has been placed on a sounder empirical footing. There's harder work ahead. As more data and new techniques become available, we can readily envision better currency, yield curve, spread, asset allocation, and credit derivative models.

I know that many of you may disagree, but I think that we should plan the complete automation of our asset management process from currency and curve positioning all the way through credit selection by latter half of this decade. A data shortage again probably will thwart this goal. But this long-stated vision will finally become reality during the early 21st century. Let's get there first.

You may not want to get into the details, but our mathematics of pattern recognition and prediction will be vastly improved. In reality, most of our industry's algorithms actually hinge on 17th and 18th century mathematical techniques. Over the past 15 years, Dream Team has experimented with GARCH/ARCH, fractals, neural nets, genetic algorithms, artificial intelligence, and VAR. Although fascinating, our efforts have not produced any revolutionary breakthroughs in our investment-management process.

The next new, new thing is wavelets: find a functional fit for observed patterns from a library of wave functions. We have just begun to experiment. It's too early to tell whether we will produce any meaningful results. We also plan to keep our eye on behavioral models, non-parametric estimation, and Gibbs sampling techniques that allow for much richer classes of Bayesian estimation.

2. The Growing Challenge of Benchmark Selection: With the sudden proliferation of new indices, benchmark selection has entered the quantitative purview. Asset allocation starts with the selection of a benchmark. This used to be simple. Plan sponsors sided up to the Lehman Govt/Corp or U.S. Aggregate for the U.S. dollar investment-grade markets, J.P. Morgan EMBI for emerging-debt markets, and Salomon WGBI for global treasuries. The benchmark field has become much more complex with the arrival of third generation macro indices in 1999 (U.S. Universal and Global Aggregate) and the rapidly changing composition of major index benchmarks.

The decline of U.S. Treasury issuance already has had an impact on the properties of U.S. indices. In the U.S. Aggregate Index, the market value of MBS surpassed Treasuries for the first time in 1999. The rise of the MBS asset class magnifies swings in Aggregate Index duration. And the long-term shrinkage of U.S. Treasuries will eventually leave an overall index dominated by spread product. This holds the prospect of higher nominal and excess return volatilities to the likely detriment of asset class Sharpe ratios. Undoubtedly, this will provide further ammunition for the growing legion of investors who prefer equities to debt assets.

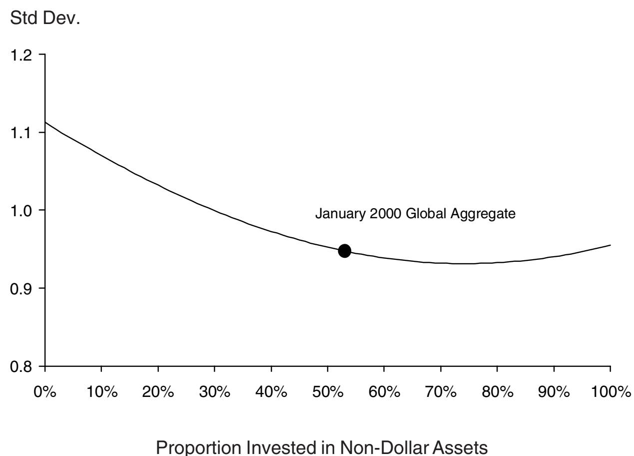
To offset this inexorable creep in U.S. index volatility, we should be proposing an obvious remedy to our U.S. clients. Diversify into the new macro indices. There are two choices: go down the credit ladder or go global.

The U.S. Dollar-Denominated Universal Index presents a market-weighted combination of the U.S. Aggregate with high-yield corporates, emerging-market debt issued in dollars, 144As, and Eurobonds. Since the beginning of the historical series in 1990, the Universal Index outperformed the Aggregate in terms of risk and return. More surprisingly given the U.S. high-yield corporate storm in 1990 and the EMG debt squalls in 1995 and 1998, the market-cap allocation in the Universal Index to high yield and emerging markets almost equals the optimal combination that minimizes the historical return variance (See my graph).

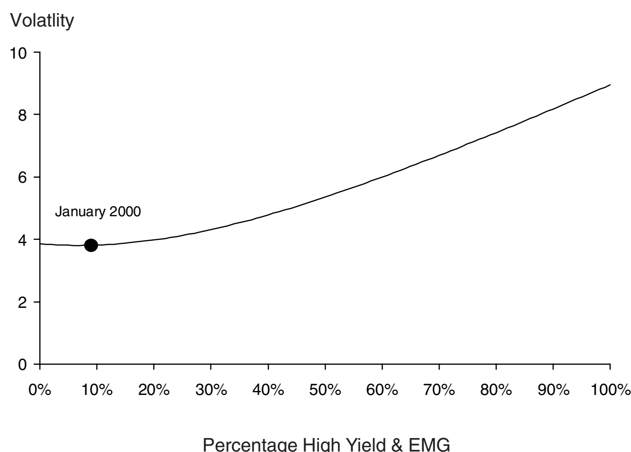
The hedged Global Aggregate (in U.S. dollars), the collection of all investment-grade government and spread product debt in all currencies, has done remarkably well against the U.S. Aggregate as well (see my table). This partially reflects the mid-to-late 1990s European convergence that occurred for much of the study period. Seemingly, globalization reduces return volatility (see my graph). And once again, the market-cap weight of the non-dollar portion comes very close to the ideal risk minimizing weighting.

In a one-to-one comparison of the two alternatives to the U.S. Aggregate Index, the Global Aggregate delivered a higher information ratio than the U.S. Universal. The implication: for the first time, we have some evidence to persuade clients that portfolio extension into lower quality and multi-currency domains will produce better medium-term and long-term results.

Standard Deviation of Monthly Hedged Returns from Mixing U.S. Aggregate with Non-Dollar Treasury
January 1993-December 1999



Annualized Volatility of Total Returns:
Mix x% High Yield & EMG with (1-x%) U.S. Agg, January 1993-December 1999



Global Aggregate, U.S. Universal, and U.S. Aggregate
Dollar Returns, 1993-1999

				Outperformance Relative to U.S. Aggregate	
	U.S. Aggregate	U.S. Universal	Global Aggregate Proxy Hedged	U.S. Univ.	GlobalAgg
1993	9.75	10.40	11.37	0.65	1.62
1994	-2.92	-3.08	-3.49	-0.16	-0.57
1995	18.47	18.48	18.16	0.01	-0.31
1996	3.63	4.45	7.24	0.82	3.61
1997	9.65	9.77	10.29	0.12	0.64
1998	8.69	7.30	10.02	-1.39	1.33
1999*	-0.82	0.17	0.79	0.99	1.61
Annualized Cum Ret	6.42	6.58	7.56	0.16	1.14
Annualized St Dv 3.85	3.79	3.35	0.77	1.24	
Ave Ret/St Dv	1.67	1.74	2.26	0.21	0.92
Annualized Sharpe Ratio	0.49	0.54	0.89		

* Returns from 1999 are from the actual Global Aggregate, rather than the Global Aggregate proxy.

Digging deeper into the index realm, there are substantive issues lurking for our portfolio consideration. In general, we evaluate index performance relative to Treasuries. Is this going to be obsolete going forward should all sectors trade relative to swaps? The entire analysis of excess returns, spread movement, and diversification benefits will have to be re-visited.

3. Asset Allocation: It's hard to think of an aspect of investment management where theory and practice collide more intensely. In theory, Markowitz optimization is a straightforward exercise. In practice, the blind use of Markowitz is a deadend leading to extreme allocations that are far riskier than naive diversification. Standard applications of mean-variance optimization are extremely sensitive to the measurement errors in the mean, variance, and correlation estimates input into the procedure. In many cases, these measurement errors drive portfolio recommendations. However, once we move away from Markowitz, asset allocation becomes a back-of-the-envelope process (a former specialty at Dream Team), not a comforting thought, given that the stakes run into the billions of dollars.

4. Data Thinness: The bane of all our models. Even for plain-vanilla U.S. asset classes, our data only go back to 1973. Excess returns and other important model-dependent data begin in the late 1980s. Newer asset classes such as euro corporates (July 1, 1998) and CMBS (January 1, 1999) began yesterday in data terms. And the quality of early data entries can be suspect. For Asian corporates, the data series just began in July 2000.

Estimates from these short data series determine many of the parameters of our risk and asset allocations models.

For some asset classes, data history is short enough that the August-October 1998 spread sector crash drives the estimates. Including this crash period moves us to extreme conservatism. On the other hand, investors can only ignore this period at their peril.

5. Proliferation of Asset Classes: Financial innovation seems to be never ending. This produces continual headaches for risk modeling. New U.S. products (e.g., CMBS), the push to multi-currencies, and changes in market composition make this a particularly demanding time for risk model development.

6. Broadening the Asset Mix Can Destabilize the Meaning of Fundamental Bond Measures: "Yield," "duration," and "excess return" are some of the most meaningful concepts in the management of traditional bond portfolios. But many of these concepts lose their dependability with the inclusion of new asset classes. Asset classes such as MBS and ABS, with highly variable cash flow timing, diminish the usefulness of yield statistics. Duration, convexity, and excess return simply lose their meaning for multi-currencies. Lehman's modified-adjusted duration, for example, measures the sensitivity of an asset's price return to parallel shifts in the Treasury yield. But with multi-currencies, there is no one Treasury curve. What does it mean for the "treasury curve" of a multi-currency portfolio to shift? Is it a shift in the dollar curve, the yen curve, or some weighted average of the various local treasury curves? As currently calculated, modified-adjusted duration provides the sensitivity of multi-currency portfolio returns relative to a simultaneous shift in all local treasury curves. But this seems a substantially different entity from the duration concept used in single-currency portfolios.

7. Is In-House Modeling Software the Solution? The lack of adequate modeling software in the marketplace forces us to build our own. Spreadsheets are quick, but their quality is problematic. Real software development can be a time and resource sink. And there's always the danger that in-house software may be obsolete before its completion.

8. Investment Technology: Innovations come at a rapid fire pace in information technology. Our history has been to act in a reactive, "make the pain go away" fashion. When IT problems threaten to put us at a major competitive disadvantage (with respect to performance, client service, recruitment, etc.), we engage in a major one-time push to fix the problem.

We've all seen the payoffs from our IT investments. Our clients, while clamoring for expanded (and occasionally more reliable) capabilities, have generally given our web site high marks. They value the instantaneous access to the current value, return, and risk characteristics of their accounts. We, in turn, are extensive consumers of the Internet. Our Internet activities range from using ECNs to trade to using intelligent agents to search the net for information relevant to our current and prospective portfolio holdings.

The web and its potential are still growing at an exponential rate. Up until now, even relatively unsophisticated users have been able to take advantage of much of what the Internet has had to offer. However, the future may be somewhat darker for those behind the cutting edge. Sophisticated imitation web sites may proliferate, striking at the ability of standard search engines to sort among the profusion of web clutter. Along with viruses, automated software that searches for and attacks vulnerable web sites may become an increasing threat. Users who stay on top of the IT curve should be able to maintain the reliability and usefulness of their Internet operations, but those behind the curve may find themselves continually treading water.

Chateau Whistler

We should give serious consideration to elevating IT to a strategic, rather than a supporting, role in our organization. An IT officer, whose status would be on par with those of our other global directors would allow us to be more active in this crucial area and allow me to offload my current IT oversight responsibilities and concentrate on analytics.

See you,

Mary

GLOBAL MARKETING VIEW
Global Director of Marketing: Scott Daniels

10:18 am
Friday, July 21, 2000

Dear Crew:

My able colleagues already have communicated a comprehensive summary of capital market insights. I defer to their wisdom. Fortunately, I don't have to predict the volatility surface for the yen curve on March 19, 2002.

Hopefully, this doesn't sound too self-serving. But from my perch, superior marketing has become even more important to the success of asset management firms than superior performance. There are hordes of outstanding equity and debt asset managers hiding under rocks. Conversely, we all can think of rapidly growing asset managers with less distinguished track records.

This insight hardly represents a revelation. Marketing drives business success in all industries. The asset management industry is not unique.

Given our asset accumulation growth during the 1990s, our marketing team respectively applies for an "A" grade. Still, we could do better. And we will face stiffer challenges ahead just to hold our market share.

During the past two decades, the asset management industry has evolved from almost a theological calling for some capital-market practitioners to a full-fledged business. Thanks to the institutionalization of savings, our industry's scale has grown enormously. As in so many professional endeavors, from health care through accounting and legal practices, enterprise scale necessarily changes business methodology. Professional portfolio managers cannot possibly spend time with all of their existing clients, prospect for new clients, and deliver sustained exceptional portfolio performance. The unbundling of the asset management and marketing functions has dramatically improved our efficiency at Dream Team. This same unbundling process has been emulated by all of our major competitors in the U.S. With a lag in some countries, European and Asian investors have followed suit.

In turn, our early advantages from aggressive marketing have been diluted. All major investors now regularly feature frequent visitations, monthly performance letters, reasonable client entertainment, annual and even semi-annual capital market workshops (often with marquee speakers) at pleasing locales, and superb spinning in the financial media, as well as participate in the ever expanding roster of "expert industry conferences" designed to make a profit for the conference organizer. And, given their growing power to influence the selection of asset managers by plan sponsors, we also cover the consultant community like our clients.

Unfortunately, our excellent relationships with consultants may be less helpful in the future. In the U.S., several organizations offer or promise to introduce in the near future, Internet-based access to the performance and style of all total return managers. Instead of lofty consulting fees, this Internet convenience will enable the sponsor community to monitor their existing manager more closely and, if necessary, to conduct their own manager searches at a minimal cost. In this new environment, sponsors may initially overweight recent non-risk adjusted returns. Ironically, this could lead to less stability among total return asset managers. If historical statistics guide sponsors to boost their manager switching, then managers may become less risk averse in the pursuit of mere non-risk-adjusted return optimization. It's too early to tell, but this could have a major impact on our clients' selection and retention processes.

Chateau Whistler

Lehman Brothers
Fourth Global Fixed-Income Capital
Workshop/Retreat
July 29-August 2, 2000

Dream Team undertakes all the standard marketing functions. To reach our organizational goals, we need to do five things.

1. Although we were one of the early users of the Internet to communicate with clients, our site requires major and continuous upgrade. Specifically, we need to provide a daily, automated e-mail response to all clients on the performance of their portfolio, as well as details of any significant capital market event. Quickness and attention to detail sells.

2. Our strongest marketing athletes are clustered in the mature U.S. market. Conversely, my team is stretched too thin in Europe and Asia. We need to add 3-5 people to my staff in both regions.

3. We grew up as a U.S. firm. We need to forge more alliances with local asset managers in Europe, Asia, Australia, and even Latin America. We've had some minor success during the past half decade. We need to do more. Dream Team has to present a customized, local face in certain regional markets in order to attract assets. For example, our Sean O'Shea, a die-hard Celtics fan, just does not play in Bangkok and Kuala Lumpur.

4. Our product menu could become stale. Historically, we successfully applied a BMW or Mercedes approach to asset management: aim for the best performance with a minimal amount of annual, cosmetic tinkering. This marketing style may be less triumphant in the future. As confirmed by multiple consultants, our clients want a more diverse array of investment products. In addition to our "core plus" active management style, we need to shift more clients to the U.S. Universal Index (don't forget the intermediate version) and to the recently enriched Global Aggregate Index. Although the fees would be less, enhanced indexing also looks promising as a technique to gain new clients. Looking further ahead, I envision a client community with an expanding need for customized indices. For example, we already have encountered multiple plan sponsors with deep interest in variations of the Global Aggregate Index (e.g., ex-Japan, ex-MBS, ex-smaller issues, or including global high yield). And following the advice of our economics team, I'd also recommend the launch of a leveraged debt fund (we'll avoid the use of the term "hedge fund").

5. Dream Team needs to do more with the financial media. We have been reactive instead of proactive in courting the press. Other firms regularly gain more free airtime on CNBC and in the print media. Given our strategic thrust in non-U.S. markets, we would be well served to concentrate on the European and Asian financial media.

Let's play 36 a day at Whistler. Maybe Lars actually will win a hole or two.

Scott

ECONOMICS
Global Economics Director: Russell Harris

4:45 pm
Sunday, July 24, 2000

To My "Dreaming Colleagues:"

I very much share the astute convictions of Fed Chairman Greenspan on the key character of the global financial system.

Let's consider the elements of the emerging global financial system as seen by the chairman:

- Increased communication boosts liquidity and the availability of financial instruments. (In fairness, this projected liquidity gain has not been realized yet in the debt capital markets, but it's coming.)
- New users of these credit channels may look safer than they really are, attracting too much new money. (In retrospect, consider portions of East Asia and Russia in the early 1990s.)
- Inevitable disruptions will test the system as new users of new instruments emerge. (Usually after such disruptions, financial institutions will implement policy changes intended to curb risks.)

If this does succinctly describe the financial system of the early 21st century, notice the conclusions that follow. Greater global efficiency advantages will become available but only through financial innovations that ironically may increase the scope for accidents. Just as children are more likely to fall off a bicycle than adults, new financial channels are often the source of bigger accidents than old established markets.

Sticking to the chairman's view: our environment is subject to unforecastable shocks in proportion to how powerful and efficient the newly introduced financial technologies turn out to be. From his point of view, the driving issue for macro policymakers is how to prevent the inevitable disruptions in advance. This way, central banks and supranational organizations can limit the call on public bailouts in the face of highly disruptive events where the harm may threaten social peace (e.g., Indonesia in 1997). Often in these systemic cataclysms, public guarantees are extended where they should not be, ending up by pulling a new wave of even more money into an unstable area. Very bad policy follows.

Instead, macro policymakers must work toward the implementation of the following prevention mechanisms:

- Foster maximum information for all involved each step of the way.
- Encourage frequent small market losses to guard against the repeal of moral hazard and to teach markets to evaluate positions based on the new, deeper information.
- Insist on public bailouts only in the absolute last extreme—investor self-interest must be the foundation of private capital markets.
- Incent alternative financial forms so that economies are not dependent on any one market (e.g., the U.S.) or institution for their basic welfare.

If unexpectedly severe shakeouts keep emerging, then markets will reduce leverage all around. This reduces ongoing vulnerability to the unexpected and will be the logical course of self-interested money under conditions of uncontrolled risk. It is just a matter of getting to this point without too much collateral damage.

All very interesting, but what are the strategic implications for Dream Team? Foremost, we need to exploit fully the

new information flows. After all, what makes the world work the way the chairman describes is the explosive reduction in computing and communications costs. This, in turn, unleashes a torrent of new information and leads to the frantic pace of financial change that we see, as new possibilities create sudden capital flows, some of which inevitably will go too far.

First Recommendation: Invest in Information

To enhance our portfolio success, we must continuously upgrade our information architecture. In particular, we need to upgrade our first-generation "intelligent agent software" to keep track of all new fresh data pertinent to our positions. For our bond portfolios, we should feel more comfortable with our currency and yield curve positions given the ongoing move from central bank/finance ministry opaqueness to sheer transparency. With their increasingly clearer signaling mechanisms, many of these institutions effectively communicate their policy shifts well in advance. And we should be less reluctant to assume more speculative-grade issuer risks given the growing availability of near real-time industry and company analyses.

Our Economics Function

Right now, we track economic and market conditions in broad geographical areas—the Americas, Asia, and Europe—with four analysts. Together, we assimilate a great deal of information, both on our own and gleaned from the sell-side. Our objectives are to insure that we understand what to expect in the following key areas:

- National monetary policy and regional business cycles.
- Industrial sectors and their particular cycles.

In these areas, we need some indications of how fresh information matters in adjusting our existing evaluations (if necessary). So, we perform two basic functions. The first is construct and maintain a model for how macro policy is evolving and where the critical decision points will emerge. Here, we listen to the models prevailing elsewhere and keep an eye out for large-scale alternatives to our major market constructs. But we rarely change our main model of how the markets are working. A periodic detailed evaluation of Street and vendor models would be useful, but we never see such detail from these outside economic analysts, who are consequently less valuable than they could be.

The second main area in which sell-side economic analysts can help is in keeping an eye on detailed developments in several data sets. We need to catch every relevant observation from the three great information sources—government data mills, business association and surveys, and accounting data. From these sources, there will always be some observations that we may miss. Picking them up could tell us that some critical part of our model is confirmed or denied. For this purpose, we sometimes wish that sell-side research would be cast more in the form of what is the surprise compared with expectations and where the unusual and unexplained observations are to be found.

Why keep an internal economics/strategy area at all? Because we can do what no outside supplier will do thoroughly and in detail: a) hash out with management the model behind the risk they are taking and b) follow the reported real-word facts that can tell us how the model is playing out. The integration of the process is something that an outside sell-side research outfit will not be able to do for us. But they can help. What does not help is strident, almost ideological assertions about the necessary importance of one pet theory or another (Street, economic vendors, and newsletters are all occasionally guilty.)

Second Recommendation:
New Information Facilitates New Investment Arenas

Cheaper information allows us to search out and to participate in new credit channels (e.g., emerging-market debt, structured credit products). It also enables us to understand more precisely the assumptions upon which we are making investment decisions. This process can only be done with an internal analysis group. In general, cheaper information increases the value of employees who can work with information to develop conclusions. Critical parts of the information processing are best done internally in this new environment.

Financial Leverage in the New U.S. Economy

As the chairman points out, the new financial economy involves many new channels for credit. One inevitable outcome is the increased availability of financial leverage. An economic system made up of self-interested participants can deal with the heightened risk inherent in leverage once the novelty wears off and an accurate assessment of risk emerges. Until that time, the danger exists that a new class of leverage (like certain segments of the derivatives markets), upon invention, will tend to be self-reinforcing. Money is borrowed to buy an asset and the asset price goes up, attracting new leveraged investment. Because the leverage is new, there is little realization of the amount of downside risk exposure for the most-leveraged latest buyers.

In July 2000, the main current in capital markets is arguably the rolling and more-or-less controlled deleverage of risk in the dollar-linked financial markets. This shows up in dollar pegs that collapsed in the Pacific, Latin America, and Russia. Dollar pegs, as the chairman correctly pointed out, are leverage devices—banks or others borrow abroad to lend at home on the presumption that the peg will not break. As fresh borrowing comes in, the weight of money keeps the peg easily financed. But other deleveraging has been seen—relative value hedge funds and, more recently, the biggest directional macro hedge funds. All found that the assumed risks financed with borrowed money could lead to outsized losses.

Arguably and contentiously, the big issue for the rest of 2000 and into 2001 is the degree of leverage that has emerged to bid up U.S. equity values. Companies have borrowed heavily to retire equity; households have borrowed heavily (mostly against home collateral) to finance increased personal consumption and to bid up equity. Using good home and equity collateral, the consumer core of America has arguably leveraged up its equity portfolios. This may or may not be the source of erratic deleveraging in the years ahead. If we are on the right track here, we should prepare for a complete cycle of deleveraging and then releveraging across U.S. asset classes.

Third Recommendation:
Dream Team Should Create a Leveraged Debt Fund

The ranks of the macro hedge fund managers have been thinned out over the past two years. This is a cyclical phenomenon. Under different flags, perhaps, we will see their return during the first half of this new decade. Why can't Dream Team offer a leveraged debt fund to our clients that tracks the best opportunities across the global credit markets? With the extended prospect of only single-digit total returns for most debt asset classes, we must worry about the competitive threat of equities. Based on our long-term track record, many of our existing clients and certainly some individuals with very high net worth would be very interested in such a new Dream Team product.

On behalf of those clients who grant us permission to move from our zero-leverage position, we should carefully use leverage to seek higher-return trades where we have done

the homework and really believe in a particular investment theme (long dollar/short yen), sector (investment-grade spread product), or issuer. In all cases we propose to pay close attention to the global credit cycle in making our investments.

Thanks,

Russell

GLOBAL CIO

Mohammed Sherif

11:15 am
Thursday, July 27, 2000

Dear "Dreamers:"

Thank you all for your fantastic contributions. I fear that our leisure at Whistler may be curtailed. The reconciliation of these excellent ideas into a coherent strategy for Dream Team could take weeks, not the two days budgeted.

Let me try: after reading all of your memos:

- We were all fortunate enough to choose this fabulous profession. I think that we can confess to endless fascination about the evolution of the capital markets, delight in the search for new analytical techniques, and enjoy playing our role in channeling the vast pools of global debt capital to their best use. We are not quite the medical profession, but we truly are playing a very positive role in global economic development. And the compensation's not too bad either.

- Never forget though, asset management is a business, not a spiritual calling. Our owner, Colussus Universal Bank, cares only about annual cash flow growth from its asset management arm. We either meet the annual target of 15% per annum communicated to its shareholders and equity analyst coverage, or we can expect to be replaced by new management. Looking at our industry, I seriously doubt that we can achieve this target through higher fee rates per unit of investment. More likely, competition will compress management fees by 20%-30% over the next five years. We have zero choice; we must grow our asset base. Allowing for this slippage of management fees, we need to grow by about 25% per year to ensure that we reach our cash flow targets. This works out almost exactly to a tripling of our asset base over the next five years.

- Aggressive? Yes. Unrealistic? Absolutely not. Think back to 1989, when we were only a management-owned U.S. firm with $11.0 billion of assets. At the time, we would have gladly settled for $25.0 billion in mid-2000. Our current goals may even be too conservative. Our expectation of sustained global economic growth means more savings, by both individuals and institutions, for us to manage. This lifetime bond professional almost looks forward to a sustained minor correction in the U.S. and European markets to wipe the smile off the equity prophets. Individuals need a catalyst to rediscover the proper long-term use of bonds. Help is coming. Thanks to demographics, retiring baby boomers will begin to pour money into the bond asset class by 2005. For the retired as well as the fortunate few technology entrepreneurs who have won the equity lottery, bond coupon clips are vastly superior to the unpredictable realizations from equity sales. And except for a handful of utilities with vestigial dividend payout programs, the U.S. equity market has become practically dividend-less.

- As full-fledged members of the knowledge and prediction business, let's not try to set immutable decision-making dogma. Closed minds have short careers. New information shapes our yield curve views. New information and experience will govern our investment decision-making. We should strive continuously to improve our process. We cannot fully project the process in 2005.

- My five-year global capital market call: inflation will prove more problematic than acknowledged by the current consensus, creeping up to about 4% for at least one full year by 2005 in both the U.S. and Europe. My pessimism may reflect the origin of my career in the 1970s. I've seen inflation. The past two decades of disinflation have lulled us into complacency. Unfortunately, the seeds of a cyclical inflation wave appear to be in place despite the best intentions of the central banks, fiscal rectitude, and the marvels of productivity growth. Commodity and wage inflation have clearly begun. The result: short U.S. rates may well hit a cyclical peak of 8%-9%, and short European rates could move into the 7% bracket. It's hard to imagine short Japanese rates reaching 2.0%.

  Credit makes me very nervous. To prosper in credit debt, we have to be right at least 90% of the time. And if we stumble into one of those major credit potholes that occur about 5-6 times annually, we can obliterate our relative portfolio performance in an entire currency. Let's get this straight: even at the height of global economic prosperity, our teams envision modest deterioration of European and U.S. corporate credit quality. Asian and Latin American credit quality will be prone to mini-cycles. And yet, all regions are optimistic about the use of credit products to differentiate portfolio performance. Are we putting too many eggs in the credit basket? Even though there are availability and liquidity limitations, shouldn't we be placing more emphasis on clipping yield in very high-quality structured products like ABS and CMBS? Sure, we will be exposed to spread fluxes as in all asset classes. But we won't have any bonds crash overnight from a 95 price to 67.

  Are we overconfident about the steady, continued assimilation of credit and spread products into portfolios? At a time of milk and honey in the U.S. and Europe, I think that the fairly astounding credit shocks, as well as primary/secondary spread-sector market outages during 1998-2000, may represent a disturbing early warning signal that all is not well in the debt capital markets. By 2005, U.S. Treasuries may account for only 14% of the U.S. Aggregate Index and about 11% of the U.S. Universal Index. In such a spread-sector denominated market, won't spread volatility be even higher, especially for credit products? If issuers ever confront an episode of dampened access to the commercial paper, MTN, and long-term credit markets, then the August 1998 Spread Crash will look mild in comparison. Let's be very, very careful!

  Although we should be very cautious about credit/liquidity cycles, I actually am more optimistic about the "general provision of liquidity." The equity exchanges are currently racing to create a singular global electronic equity exchange. By 2010 and possibly as early as 2005, there will be a single, global bond exchange. For organizations with the technology and research capability of a Dream Team, this development should reinforce our asset allocation and security strengths.

  The conversion to swaps benchmarks will not be completed over the next five years, even in the dollar markets. Anyway, this is really not that substantive. I see the likely adoption of excess return by the consultants and sponsors as more significant. As AIMR did with performance reporting requirements, there eventually will be an industry effort to standardize the definition of excess returns.

  The "privitization of the global bond market" makes a nice slogan. I have some major doubts. As we convene, the U.S. and Germany are contemplating major tax

cuts beginning in 2001-2002. And when this hearty global economic cycle trips, a complete inevitability in my opinion (two years ago at this time, we were worried about major recessions and even depression; today, a group of pundits has banished the business cycle), I can easily envision the return of deficit spending during the second half of this decade.

Amusingly, citing the "crowding out" of private debt by government debt financing in the two decades ago, the markets fretted about spreads. I guess the converse doesn't apply. Citing the drop in government debt, certain groups see wider spreads.

- As usual, our fabulous credit and quantitative research teams offer a marvelous depiction of their existing and future capabilities. Clearly, we need to boost our internal research capabilities. We have no choice. Can we be so certain that major dealers will be able to fund such ambitious research efforts, given the likely margin compression in primary and secondary markets? Moreover, we need to do everything to maintain our competitive edge. And as the global debt markets inevitability blossom in depth, we will need more research assistance. Working with certain preferred providers, we must construct our own global risk and performance/return attribution models. A first-tier, world-scale firm like Dream Team cannot wait for vendors to complete upgrades. I don't believe decision-making will be completely automated by 2005, 2010, or even 2025. But I strongly believe that there are uncovered, regular reoccurring patterns in the global debt capital markets. Our quants have years of research ahead on this theme. On the credit side, the rating agencies perform a very valuable basic screening process. But they are far from perfect. We cannot afford casualties. Fortunately, a positive consequence of our growing scale will be our ability to fund even more internal research. A request: our entire senior management team, not just the research directors, has an obligation to ensure that all research is directed toward the pursuit of our portfolio success. I see little benefit in abstract studies or re-inventions of the current practitioner knowledge base. For example, we already know that spread products deliver higher long-term risk-adjusted performance. Instead of simple justification studies, we need to pursue selection studies.

  I think that we all have some reservations about dealer research. There's a preponderance of descriptive flow research. We simple do not need as many faxes, e-mails, and even phone calls to post us about economic news or corporate events that now immediately appear on the wire services.

- I find slightly disturbing this sudden proliferation of bond indices. Yes, the world bond market needs to be completely mapped. But these market-weighted aggregations, containing a horde of illiquid instruments, represent exactly what? The answer to this question will vary across regions and among clients and consultants. In turn, we unfortunately can expect a severe fragmentation of index selection. As customized debt indices likely prevail over generic indices, this will add to our administrative burdens. Already, I can imagine at least a dozen variations of the Global Aggregate Index and a multiple of that for the proposed Multiverse Index (hopefully, that bright idea stays on the drawing board for another decade).

- Our global brand has been well defined. We are active managers. I like the leverage fund idea proposed by our economics team. Let's do it. For now, we have little interest in indexing-type products. We are not fence

sitters, content to offer near fee-less index and enhanced indexing products. Each region should have complete autonomy in its mission to outperform its local indices or markets. It would be a gross mistake for the center to impose local allocation or security selection decisions. On other hand, there are several stylistic precepts that should be globally enforced. For example, if our global investment committee decides to take a dim view on immediate spread prospects for EMG credits, we can't have a local manager loading up on EMG products. Regional managers must enforce the global policy guidelines.

Over a five-year forecast period, I won't even try to recommend the preferred course for asset allocation. It's important to maintain our objectivity, avoid becoming too attached to our regional assets, asset classes, and even certain issuers. As a corollary of my expectation of better liquidity ahead, I would not object to more frequent asset allocations than the suggested 3-4 times per year. The pragmatic guideline: if it's appropriate after transactions costs, then execute the trade.

- Our biggest investment risk resides in the geopolitical realm. History is replete with market curve balls tossed from surprise geopolitical developments. I will not offer any predictions. Like the paperback adventure novelists who write for the racks of airport bookstores, we all can create potential scenarios. The early 21st century shapes up as a period of peace and tranquility. Let's stay vigilant. Geopolitical calm also characterized the first decade of the 20th century.

- Surprisingly for a people business, no one mentioned staff development and recruiting. We must place more emphasis on both. Our people cannot just be narrow desk slaves, responding to dealer e-mails and calls and content to be bond custodians, not aggressive managers. We need to shorten the learning curves, encourage our staff to pursue CFA's, participate in industry organizations, and periodically attend review seminars and courses. On recruiting, we can pay extravangantly to entice the top students at universities like MIT and Chicago to join our team. Alternatively, we can pursue the top MBA and Ph.D. students at next tier institutions. Based on our economics, I favor the second alternative.

- Our always-thorough offsite would be incomplete without a session of very long-term "blue skying." Major capital market issues reside over the horizon. Their clarification will not occur by 2005. Like contingency planners at the Pentagon, if we have any extra discussion time, we should acknowledge their existence and begin to think about their possible effects on Dream Team. Capital market history shows that dormant and over-the-horizon issues can suddenly pop into current market focus. Prudently, we prefer early rather than late preparation.

  - Global currency union will take place during the 21st century. The success of European Monetary Union already has spawned talk of its expansion throughout Eastern Europe and an Asian regional currency, centered on the yen. Other regional economic blocs, like Mercosur, contemplate the merits of a regional currency (more likely, they eventually will adopt the U.S. dollar). Thinking of all the capital market turmoil during the 20th century triggered by unexpected currency moves, a progression to several main regional currency blocs or even a single global standard by the 21st century might make sense. Currency unification will be vigorously debated. Arguably, this would

be the 21st century version of the 19th century gold standard. To be researched and contemplated, a single global currency standard might make more sense in a virtual global economy than the quasi-mercantilist/partially free-trade world of the 19th century.

- The current dominance of the global capitalist model will be challenged. There have been several long waves of varying enthusiasm for the capitalist model during the past two centuries. The intellectual scions of Marx, Engels, Lenin, and Mao are unlikely to resurface in positions of power in major nation states over the next decade. But redistributionist, socialist platforms again may catch the electorate's fancy form time-to-time. Certainly, some non-Western theocratic states have exhibited a marked distaste for the globalist model. Even in the West, these natural fluctuations in economic regimes can be expected to exert an influence on fiscal policies, particularly social spending, tax rates, and environmental policy. With major tax cuts coming across Europe and the U.S. during the early stages of this decade, including a welcome and amazing probable repeal of the U.S. estate tax, these notions truly constitute long-term thinking. Still, colleagues, be ready. Whenever the next major global economic contraction occurs, the globalist model likely will be cited as at least a partial scapegoat.
- The remediation of uneven knowledge and technology distribution, within major nation states and between rich-poor nations, poses a major challenge. This long-term goal appears achievable with declining technology costs and the arrival of virtual educational facilities. This could have a very positive wealth effect for currently disadvantaged regions and lead to further mainstreaming of the globalist model. In turn, the capital markets would become even broader and deeper.
- The future of the corporation has come into question. Ironically as the human life cycle extends, the life cycle of many industries and firms will dwindle given the rapid pace of technological change. A few pundits already question the long-term viability of the current corporate structure. Even the legendary Jack Welch, GE's illustrious chairman, has long been a practitioner of continuous "creative destruction." The limited-liability advantages of the corporate form ensure its survival during this century in my opinion. However, the quickened coming and going of corporations make me even more nervous about our growing assumption of corporate credit risk.
- In an ever more integrated world, local tax rates must be harmonized to a global standard. The current helter-skelter arrangements, largely a function of local history, no longer make economic sense. The time and energy devoted to steering capital flows to optimize tax treatment could be better devoted to more productive endeavors. In particular, we would love to see the end of withholding taxes on interest payments to non-resident debt holders (e.g., Japan). This would greatly improve the efficiency of global capital flows.

There's much to discuss. In advance, I look forward to your wisdom.

Regards,

Mohammed

CASE QUESTIONS

1. Should Dream Team strive to become an "alpha factory," a "distribution channel," or both? Does your response vary by region? Do you agree with Dream's strategic agenda for Asia? A recurring theme over the past two decades: are non-local asset management firms too optimistic about Asian economic and asset management prospects? Would Dream Team accumulate Asian assets more rapidly by sticking to a traditional, absolute return model or by claiming pioneer status through the introduction of Western capital market techniques? Should the Asian team operate a separate regional model or adhere to a global portfolio management model centrally authored by Dream Team's headquarters staff? Should the Asian office specialize in mandates off local indices, a regional Aggregate Index, or the Global Aggregate Index? Has the Asian staff been too conservative by its use of only very high-quality, liquid credits? Does the ability to offer global, one-stop shopping provide a competitive advantage for asset managers?

2. Has the European team jumped off the deep end of the "credit bridge?" Will there be sufficient diversity of European credit assets to implement such a strategy? Won't European investors be forced through time to relax their credit constraints? Does the European team have a valid observation about over-trading asset allocation? But how many shifts are practical per year, 3-4 or 15-20? Why are global asset allocation models so primitive compared with other models in the fixed-income industry? Are most asset allocation decisions still conducted mainly on the back of an envelope?

3. Will the combination of scale growth, liquidity scarcity, and conversion to the U.S. Universal Index hurt the ability of the U.S. team to replicate its past outperformance? As advocated by the U.S. team, should Dream Team develop and adhere to a singular global style? Is there an "optimal scale ceiling" for debt asset managers above which performance begins to decline versus the market average? Should U.S. sponsors ramp up their multi-currency investing in the pursuit of alpha as the dollar markets become more efficient?

4. In a world of supposedly shorter industry/issuer cycles, will the credit function become more hazardous? Is Dream Team running the risk of over-dependence on credit to achieve outperformance? Will merely doubling Dream Team's staff and investing in technology buttress the Dream Team credit function? Are rating agencies and dealers adequately assisting asset management firms with the credit function?

5. Should debt management firms plan on the complete automation of the portfolio management process by 2010? How should Dream Team's quantitative team best improve its contributions to investment decision-making: pure model building, seeking more information, or optimizing computing resources?

6. Has Dream Team optimized its marketing strategy? Would Dream Team be better served by branding a single style or by offering a diverse menu of total return, enhanced indexing, passive indexing, and even a leveraged debt fund? Does your answer vary by region?

7. Should Dream Team invest more in its internal economic function, hold the current team constant, or outsource its economic requirements? After the difficult performance during the late 1990s, would you entrust the economics unit with a leveraged debt fund based on macro credit cycle trends?

8. Is there a singular correct way to manage debt assets in all markets to maximize risk-adjusted returns? If not, will the markets get there by 2005? If so, will asset management be unbundled into a multi-product, eight-item menu: 2 (global & local) rows by 4 columns (passive indexing, enhanced indexing, active, and leveraged)? Should Dream Team assume eventual sponsor conversion to the "Multiverse Index" beginning in 2004? What do you think the asset-management implications will be?

9. Do you think Dream Team will reach its $300 billion goal by 2005?