

BLACKROCK SENIOR HIGH INCOME FUND, INC.

Form N-Q

July 29, 2010

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number 811-07456

Name of Fund: BlackRock Senior High Income Fund, Inc. (ARK)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: Anne F. Ackerley, Chief Executive Officer, BlackRock Senior High Income Fund, Inc., 55 East 52nd Street, New York, NY 10055.

Registrant's telephone number, including area code: (800) 882-0052, Option 4

Date of fiscal year end: 02/28/2011

Date of reporting period: 05/31/2010

Item 1 – Schedule of Investments

Schedule of Investments May 31, 2010 (Unaudited)

BlackRock Senior High Income Fund, Inc. (ARK)
 (Percentages shown are based on Net Assets)

Common Stocks (a)	Shares	Value
Auto Components 0.1%		
Lear Corp.	5,425	\$ 367,110
Building Products 0.3%		
Masonite Worldwide Holdings	15,842	708,930
Capital Markets 0.2%		
E*Trade Financial Corp.	271,000	401,080
Chemicals 0.0%		
GEO Specialty Chemicals, Inc.	142,466	54,693
Wellman Holdings, Inc.	5,131	256
		54,949
Construction Materials 0.1%		
Nortek, Inc.	2,570	115,650
Containers & Packaging 0.1%		
Smurfit Kappa Plc	18,171	138,826
Metals & Mining 0.1%		
Euramax International	935	186,980
Paper & Forest Products 1.2%		
Ainsworth Lumber Co. Ltd.	366,934	1,283,083
Ainsworth Lumber Co. Ltd. (b)	421,556	1,474,084
		2,757,167
Software 0.4%		
HMH Holdings/EduMedia	153,615	960,092
Total Common Stocks 2.5%		5,690,784

Corporate Bonds	Par (000)	
Aerospace & Defense 1.2%		
Bombardier, Inc., 7.75%, 3/15/20 (b)	USD 900	911,250
Kratos Defense & Security Solutions, Inc., 10.00%, 6/01/17 (b)	600	594,000

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TransDigm, Inc., 7.75%, 7/15/14 (b)	1,100	1,100,000
		2,605,250
Airlines 0.5%		
Delta Air Lines, Inc., Series B, 9.75%, 12/17/16	500	541,250
United Air Lines, Inc., 12.75%, 7/15/12	600	637,500
		1,178,750
Auto Components 3.1%		
The Goodyear Tire & Rubber Co., 8.63%, 12/01/11	4,000	4,110,000
Corporate Bonds		
	Par (000)	Value
Auto Components (concluded)		
Icahn Enterprises LP (b):		
7.75%, 1/15/16	USD 750	\$ 705,000
8.00%, 1/15/18	2,100	1,974,000
Venture Holdings Co. LLC (a)(c):		
12.00%, 6/01/09	700	
Series B, 9.50%, 7/01/05	3,325	333
		6,789,333
Biotechnology 0.1%		
QHP Pharma, 10.25%, 3/15/15 (b)	302	305,716
Building Products 2.9%		
Building Materials Corp. of America, 7.00%, 2/15/20 (b)	675	668,250
CPG International I, Inc.:		
7.18%, 7/01/12 (d)	3,500	3,447,500
10.50%, 7/01/13	1,500	1,515,000
Ply Gem Industries, Inc., 11.75%, 6/15/13	725	743,125
		6,373,875
Chemicals 3.5%		
American Pacific Corp., 9.00%, 2/01/15	610	597,038
CF Industries, Inc., 6.88%, 5/01/18	770	770,962
GEO Specialty Chemicals, Inc.:		
7.50%, 3/31/15 (b)(e)(f)	1,869	1,214,605
10.00%, 3/31/15	1,839	1,195,168
Huntsman International LLC, 5.50%, 6/30/16 (b)	495	430,650
LBI Escrow Corp., 8.00%, 11/01/17 (b)	850	864,875
Wellman Holdings, Inc., Subordinate Note (f):		

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(Second Lien), 10.00%, 1/29/19 (b)	2,383	2,073,210
(Third Lien), 5.00%, 1/29/19 (e)	1,639	639,352
		7,785,860

Commercial Services & Supplies 1.3%

ACCO Brands Corp., 10.63%, 3/15/15	365	395,113
Clean Harbors, Inc., 7.63%, 8/15/16	700	717,500
The Geo Group, Inc., 7.75%, 10/15/17 (b)	450	448,313
RSC Equipment Rental, Inc., 10.00%, 7/15/17 (b)	550	591,937

Portfolio Abbreviations

To simplify the listings of portfolio holdings in the Schedule of Investments, the names and descriptions of many of the securities have been abbreviated according to the following list:

CAD	Canadian Dollar
FKA	Formerly Known As
MSCI	Morgan Stanley Capital International
USD	US Dollar

Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
(Percentages shown are based on Net Assets)

Corporate Bonds		Par (000)	Value
Commercial Services & Supplies (concluded)			
Scientific Games International, Inc., 9.25%, 6/15/19	USD	655	\$ 676,287
			2,829,150
Construction Materials 1.2%			
Nortek, Inc., 11.00%, 12/01/13		2,581	2,684,679
Consumer Finance 1.2%			
Credit Acceptance Corp., 9.13%, 2/01/17 (b)		300	303,000
Ford Motor Credit Co. LLC, 3.05%, 1/13/12 (d)		1,340	1,286,400
Inmarsat Finance Plc, 7.38%, 12/01/17 (b)		1,150	1,147,125
			2,736,525
Containers & Packaging 2.9%			
Ball Corp., 6.75%, 9/15/20		325	316,063
Berry Plastics Corp., 8.25%, 11/15/15		1,100	1,080,750
Clondalkin Acquisition BV, 2.26%, 12/15/13 (b)(d)		2,000	1,887,500
Crown Americas LLC, 7.63%, 5/15/17 (b)		400	402,000
Graphic Packaging International, Inc., 9.50%, 6/15/17		555	577,200
Packaging Dynamics Finance Corp., 10.00%, 5/01/16 (b)		1,325	1,134,531
Smurfit Kappa Funding Plc, 7.75%, 4/01/15		1,050	1,022,437
			6,420,481
Diversified Financial Services 5.3%			
CIT Group, Inc., 7.00%, 5/01/17		4,845	4,372,612
GMAC, Inc., 8.30%, 2/12/15 (b)		4,700	4,717,625
Highland Legacy Ltd., 6.59%, 6/01/11 (b)(d)		4,000	1,800,000
Reynolds Group DL Escrow, Inc., 7.75%, 10/15/16 (b)		955	945,450
			11,835,687
Diversified Telecommunication Services 3.1%			

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Cincinnati Bell, Inc., 8.25%, 10/15/17	900	848,250
ITC Deltacom, Inc., 10.50%, 4/01/16 (b)	900	864,000
New Communications Holdings, Inc., 8.25%, 4/15/17 (b)	1,460	1,445,400
Nordic Telephone Co. Holdings ApS, 8.88%, 5/01/16 (b)	180	184,500
Qwest Corp., 8.38%, 5/01/16	3,000	3,255,000
TW Telecom Holdings, Inc., 8.00%, 3/01/18 (b)	230	230,575
		6,827,725

Corporate Bonds	Par (000)	Value
Electric Utilities 0.4%		
NSG Holdings LLC, 7.75%, 12/15/25 (b)	USD 1,000	\$ 895,000
Energy Equipment & Services 0.4%		
Expro Finance Luxembourg SCA, 8.50%, 12/15/16 (b)	1,000	970,000
Food & Staples Retailing 0.4%		
Rite Aid Corp., 9.75%, 6/12/16	825	875,531
Food Products 0.9%		
B&G Foods, Inc., 7.63%, 1/15/18	500	498,750
Bumble Bee Foods LLC, 7.75%, 12/15/15 (b)	380	378,100
Smithfield Foods, Inc., 10.00%, 7/15/14 (b)	1,050	1,124,156
		2,001,006
Health Care Equipment & Supplies 0.6%		
DJO Finance LLC, 10.88%, 11/15/14	710	738,400
Hologic, Inc., 2.00%, 12/15/37 (f)(g)	830	708,613
		1,447,013
Health Care Providers & Services 2.1%		
American Renal Holdings, 8.38%, 5/15/18 (b)	245	238,263
DaVita, Inc., 7.25%, 3/15/15	525	522,375
HCA, Inc.: 8.50%, 4/15/19	210	219,450
7.25%, 9/15/20 (b)	405	403,988
Tenet Healthcare Corp. (b): 10.00%, 5/01/18	850	931,812
8.88%, 7/01/19	2,230	2,338,712
		4,654,600

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Health Care Technology 0.8%

IMS Health, Inc., 12.50%, 3/01/18 (b)	1,580	1,813,050
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Hotels, Restaurants & Leisure 0.9%

Little Traverse Bay Bands of Odawa Indians, 10.25%, 2/15/14 (a)(b)(c)	1,210	400,813
MGM Mirage: 13.00%, 11/15/13	80	91,200
10.38%, 5/15/14 (b)	720	765,000
11.13%, 11/15/17 (b)	750	811,875
Tropicana Entertainment LLC, Series WI, 9.63%, 12/15/14 (a)(c)	220	297
		<u>2,069,185</u>

Household Durables 1.1%

Beazer Homes USA, Inc., 12.00%, 10/15/17	1,000	1,110,000
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Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
(Percentages shown are based on Net Assets)

Corporate Bonds	Par (000)	Value
Household Durables (concluded)		
K. Hovnanian Enterprises, Inc., 10.63%, 10/15/16	USD 1,200	\$ 1,227,000
		<u>2,337,000</u>
Independent Power Producers & Energy Traders 3.3%		
The AES Corp., 8.75%, 5/15/13 (b)	139	141,085
AES Eastern Energy LP, Series 99- B, 9.67%, 1/02/29	570	619,875
Calpine Construction Finance Co. LP, 8.00%, 6/01/16 (b)	1,600	1,616,000
Dynegy Holdings, Inc., 8.38%, 5/01/16	1,260	1,039,500
Energy Future Holdings Corp., 12.00%, 11/01/17 (e)	589	375,312
NRG Energy, Inc.: 7.25%, 2/01/14	3,000	2,962,500
8.50%, 6/15/19	500	483,750
		<u>7,238,022</u>
Industrial Conglomerates 1.5%		
Sequa Corp. (b): 11.75%, 12/01/15	1,430	1,430,000
13.50%, 12/01/15 (e)	1,930	1,966,164
		<u>3,396,164</u>
Machinery 1.7%		
ESCO Corp., 4.13%, 12/15/13 (b)(d)	1,540	1,418,725
Navistar International Corp., 8.25%, 11/01/21	1,500	1,500,000
Titan International, Inc., 8.00%, 1/15/12	770	806,575
		<u>3,725,300</u>
Media 7.7%		
Affinion Group, Inc., 10.13%, 10/15/13	1,455	1,480,463
CCO Holdings LLC, 7.88%, 4/30/18 (b)	1,075	1,054,844
	390	405,600

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CSC Holdings, Inc., 8.50%, 4/15/14 (b)		
Clear Channel Worldwide Holdings, Inc. (b):		
Series A, 9.25%, 12/15/17	340	344,250
Series B, 9.25%, 12/15/17	2,757	2,805,247
DISH DBS Corp.:		
7.00%, 10/01/13	850	862,750
6.63%, 10/01/14	750	738,750
Gannett Co., Inc., 9.38%, 11/15/17 (b)	530	555,175
Intelsat Corp., 9.25%, 8/15/14	3,500	3,561,250
McClatchy Co., 11.50%, 2/15/17 (b)	745	748,725
Nielsen Finance LLC, 11.63%, 2/01/14	1,000	1,070,000

Corporate Bonds	Par (000)	Value
Media (concluded)		
UPC Germany GmbH, 8.13%, 12/01/17 (b)	USD 1,500	\$ 1,470,000
Virgin Media Secured Finance Plc, 6.50%, 1/15/18 (b)	2,075	2,038,687
		17,135,741

Metals & Mining 1.0%		
Aleris International, Inc., 9.00%, 12/15/14 (a)(c)	840	2,100
Murray Energy Corp., 10.25%, 10/15/15 (b)	420	417,900
RathGibson, Inc., 11.25%, 2/15/14 (a)(c)	2,175	26,100
Ryerson, Inc., 7.72%, 11/01/14 (d)	1,800	1,676,250
		2,122,350

Multiline Retail 0.8%		
Dollar General Corp.:		
10.63%, 7/15/15	660	719,400
11.88%, 7/15/17 (e)	948	1,075,980
		1,795,380

Oil, Gas & Consumable Fuels 4.1%		
Arch Coal, Inc., 8.75%, 8/01/16 (b)	140	142,800
Atlas Energy Operating Co. LLC:		
12.13%, 8/01/17	825	915,750
10.75%, 2/01/18	200	212,000
Coffeyville Resources LLC, 9.00%, 4/01/15 (b)	260	257,400
Consol Energy, Inc., 8.25%, 4/01/20 (b)	900	919,125
Crosstex Energy LP, 8.88%, 2/15/18 (b)	330	325,050
Denbury Resources, Inc.:		

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9.75%, 3/01/16	520	555,100
8.25%, 2/15/20	351	362,407
El Paso Corp., 7.00%, 6/15/17	775	757,001
Forest Oil Corp.:		
8.50%, 2/15/14	280	287,700
7.25%, 6/15/19	85	80,006
Massey Energy Co., 6.88%, 12/15/13	800	768,000
OPTI Canada, Inc., 9.00%, 12/15/12 (b)	1,000	1,005,000
Sabine Pass LNG LP, 7.50%, 11/30/16	2,985	2,477,550
		9,064,889

Paper & Forest Products 1.8%

Ainsworth Lumber Co. Ltd., 11.00%, 7/29/15 (b)(e)	1,323	1,220,557
Clearwater Paper Corp., 10.63%, 6/15/16 (b)	365	400,587
Georgia-Pacific LLC, 8.25%, 5/01/16 (b)	1,630	1,695,200

BLACKROCK SENIOR HIGH INCOME FUND, INC.

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Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
(Percentages shown are based on Net Assets)

Corporate Bonds	Par (000)	Value
Paper & Forest Products (concluded)		
Verso Paper Holdings LLC:		
11.50%, 7/01/14 (b)	USD 315	\$ 336,263
Series B, 4.09%, 8/01/14 (d)	485	403,762
		4,056,369
Pharmaceuticals 0.3%		
Angiotech Pharmaceuticals, Inc.,		
4.29%, 12/01/13 (d)	955	744,900
Real Estate Investment Trusts (REITs) 0.2%		
Omega Healthcare Investors, Inc.,		
7.50%, 2/15/20 (b)	530	524,700
Semiconductors & Semiconductor Equipment 0.3%		
Advanced Micro Devices, Inc.,		
8.13%, 12/15/17 (b)	125	122,656
STATS ChipPAC Ltd.:		
7.50%, 7/19/10	150	150,188
6.75%, 11/15/11	330	329,587
		602,431
Specialty Retail 0.4%		
United Auto Group, Inc., 7.75%,		
12/15/16	845	796,413
Textiles, Apparel & Luxury Goods 1.3%		
Phillips-Van Heusen Corp.:		
7.38%, 5/15/20	485	487,425
7.75%, 11/15/23	215	227,928
Quiksilver, Inc., 6.88%, 4/15/15	2,525	2,209,375
		2,924,728
Wireless Telecommunication Services 3.4%		
Cricket Communications, Inc.:		
10.00%, 7/15/15	140	143,500
7.75%, 5/15/16	1,770	1,796,550
Digicel Group Ltd., 12.00%,		
4/01/14 (b)	800	888,000
MetroPCS Wireless, Inc.:		
9.25%, 11/01/14	2,000	2,040,000
9.25%, 11/01/14	10	10,300
Nextel Communications, Inc.:		
Series E, 6.88%, 10/31/13	1,340	1,283,050
Series F, 5.95%, 3/15/14	100	92,250

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Orascom Telecom Finance SCA, 7.88%, 2/08/14 (b)	395	355,500
Sprint Capital Corp.: 7.63%, 1/30/11	220	223,850
8.38%, 3/15/12	325	334,750
6.88%, 11/15/28	370	307,562
		7,475,312
Total Corporate Bonds 61.7%		137,038,115

Floating Rate Loan Interests (d)	Par (000)	Value
Aerospace & Defense 0.3%		
Hawker Beechcraft Acquisition Co., LLC:		
Letter of Credit Facility Deposit, 2.29%, 3/26/14	USD 52	\$ 42,317
Term Loan, 2.29% - 2.35%, 3/26/14	868	713,455
		755,772
Airlines 0.5%		
Delta Air Lines, Inc., Credit-Linked Deposit Loan, 0.20% - 2.32%, 4/30/12		
	1,213	1,157,937
Auto Components 3.4%		
Affinion Group Holdings, Inc.:		
Loan, 7.89%, 3/01/12	1,479	1,391,851
Term Loan B, 5.00%, 4/08/16	750	717,188
Allison Transmission, Inc., Term Loan, 3.01% - 3.10%, 8/07/14	4,981	4,516,024
Dana Holding Corp., Term Advance, 4.53% - 4.73%, 1/30/15	598	574,366
The Goodyear Tire & Rubber Co., Loan (Second Lien), 2.24%, 4/30/14	300	276,313
		7,475,742
Automobiles 0.7%		
Ford Motor Co.:		
Tranche B-1 Term Loan, 3.31% - 3.34%, 12/15/13	1,160	1,080,186
Tranche B-2 Term Loan, 3.26%, 12/15/13	595	552,090
		1,632,276
Beverages 0.6%		
SW Acquisitions Co., Inc., Term Loan, 5.75%, 6/01/16		
	1,447	1,442,354

Building Products 1.2%

Building Materials Corp. of America, Term Loan Advance, 3.13%, 2/22/14	1,220	1,178,034
Goodman Global, Inc., Term Loan, 6.25%, 2/13/14	1,523	1,521,102
		<u>2,699,136</u>

Chemicals 4.0%

CF Industries Holdings, Inc., Bridge Loan, 4.50%, 3/17/15	2,210	2,207,635
Chemtura Corp., Debtor in Possession Return of Capital Term Loan, 6.00%, 1/26/11	800	801,500
Gentek Holding, LLC, Tranche B Term Loan, 7.00%, 10/29/14	399	398,751
Nalco Co., Term Loan, 6.50%, 5/13/16	1,017	1,016,465
PQ Corp., Term Loan (First Lien), 3.59% - 3.61%, 7/30/14	2,521	2,291,065

Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
(Percentages shown are based on Net Assets)

Floating Rate Loan Interests (d)	Par (000)	Value
Chemicals (concluded)		
Rockwood Specialties Group, Inc., Term Loan H, 6.00%, 5/15/14	USD 878	\$ 876,604
Solutia, Inc., Term Loan, 4.75%, 3/01/17	1,250	1,247,916
		<u>8,839,936</u>
Commercial Services & Supplies 2.2%		
ARAMARK Corp.: Facility Letter of Credit, 2.23%, 1/26/14	23	21,862
Line of Credit, 3.60%, 7/26/16	41	39,974
Term Loan B, 3.54%, 7/26/16	628	607,832
US Term Loan, 2.17%, 1/26/14	349	332,430
Adesa, Inc. (KAR Holdings, Inc.), Initial Term Loan, 3.11%, 10/21/13	611	579,618
Casella Waste Systems, Inc., Term Loan B, 7.00%, 4/09/14	218	217,804
International Lease Finance Corp.: Term Loan 1, 6.75%, 2/23/15	1,100	1,074,150
Term Loan 2, 7.00%, 3/05/16	950	924,350
Synagro Technologies, Inc., Term Loan (First Lien), 2.34% - 2.36%, 4/02/14	423	380,015
West Corp., Incremental Term B-3 Loan, 7.25%, 10/24/13	767	765,836
		<u>4,943,871</u>
Construction & Engineering 0.9%		
Brand Energy & Infrastructure Services, Inc. (FR Brand Acquisition Corp.), Synthetic Letter of Credit, Term Loan (First Lien), 2.68%, 2/07/14	500	447,500
Safway Services, LLC, First Out Term Loan, 9.00%, 12/14/17	1,500	1,500,000
		<u>1,947,500</u>
Consumer Finance 1.1%		
American General Finance Corp., Term Loan, 7.25%, 4/16/16	2,500	2,420,000

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Containers & Packaging 0.7%

Anchor Glass Container Corp., Term Loan B, 6.00%, 2/18/16	418	413,383
BWAY Corp.: Term Loan, 5.50%, 5/21/17	731	727,478
Term Loan Canada, 5.50%, 5/20/17	69	68,388
Berry Plastics Holding Corp., Term Loan C, 2.26%, 4/03/15	497	445,482
		<u>1,654,731</u>

Diversified Consumer Services 2.1%

Coinmach Service Corp., Term Loan, 3.47%, 11/14/14	1,960	1,703,888
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Floating Rate Loan Interests (d)	Par (000)	Value
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Diversified Consumer Services (concluded)

Laureate Education, Series A New Term Loan, 7.00%, 8/15/14	USD 2,953	\$ 2,916,412
		<u>4,620,300</u>

Diversified Financial Services 1.3%

MSCI, Inc., Term Loan B, 4.75%, 6/30/16	1,175	1,170,594
Reynolds Group Holdings, Inc.: Term Loan (First Lien), 5.75%, 5/05/16	800	794,000
US Term Loan, 6.25%,5/05/16	894	880,214
		<u>2,844,808</u>

Diversified Telecommunication Services 0.9%

Level 3 Communications, Incremental Term Loan, 2.55%, 3/13/14	1,225	1,101,188
US Telepacific Corp., Term Loan (Second Lien), 9.25%, 7/25/15	400	399,250
Wind Telecomunicazioni SpA: Term Loan B2 Facility, 4.66%, 5/26/14	300	287,250
Term Loan C2 Facility, 3.66%, 5/24/13	300	287,250
		<u>2,074,938</u>

Electrical Equipment 0.3%

Baldor Electric Co., Term Loan, 5.25%, 1/31/14	592	589,498
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Electronic Equipment, Instruments & Components 0.5%

CDW Computer Centers, Inc., Term Loan B, 3.30%, 10/10/14	1,215	1,069,200
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Energy Equipment & Services 0.4%		
MEG Energy Corp., Term Loan D, 6.00%, 4/03/16	970	955,264
Food & Staples Retailing 1.4%		
Pierre Foods, Term Loan B, 7.00%, 2/17/16	588	590,500
Pilot Travel Centers, Term Loan B, 5.25%, 11/18/15	1,250	1,247,991
Rite Aid Corp., Tranche 4 Term Loan, 9.50%, 6/10/15	1,196	1,212,619
		<u>3,051,110</u>
Food Products 2.3%		
Dole Food Co., Inc.:		
Credit-Linked Deposit, 8.07%, 4/12/13	828	826,714
Term Loan B, 5.00% - 5.50%, 2/10/17	565	563,996
Term Loan C, 5.00%, 2/10/17	1,403	1,400,825
Pilgrim s Pride Corp., Term Loan A, 5.29%, 12/01/12	725	717,750

BLACKROCK SENIOR HIGH INCOME FUND, INC.

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Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
(Percentages shown are based on Net Assets)

Floating Rate Loan Interests (d)	Par (000)	Value
Food Products (concluded)		
Pinnacle Foods Finance LLC, Tranche C Term Loan, 7.50%, 4/02/14	USD 1,700	\$ 1,680,345
		5,189,630
Health Care Equipment & Supplies 0.4%		
DJO Finance LLC (ReAble Therapeutics Finance LLC), Term Loan, 3.35%, 5/20/14	881	846,663
Health Care Providers & Services 3.4%		
Ardent Health Services, Inc., Term Loan, 6.50%, 8/10/15	600	586,500
CHS/Community Health Systems, Inc.: Delayed Draw Term Loan, 2.79%, 7/25/14	105	98,537
Funded Term Loan, 2.60% - 2.79%, 7/25/14	2,017	1,885,941
DaVita, Inc., Tranche B-1 Term Loan, 1.79% - 1.85%, 10/05/12	300	292,667
HCA, Inc.: Tranche A-1 Term Loan, 1.79%, 11/16/12	2,755	2,606,010
Tranche B-1 Term Loan, 2.54%, 11/18/13	125	118,125
Harden Healthcare, Term Loan A, 8.50%, 2/22/15	398	390,218
Renal Advantage Holdings, Inc., Term Loan 6.00%, 5/25/16	600	597,000
Vanguard Health Holding Co. II, LLC (Vanguard Health Systems, Inc.), Initial Term Loan, 5.00%, 1/29/16	1,100	1,085,150
		7,660,148
Health Care Technology 0.7%		
IMS Healthcare, Term Loan B, 5.25%, 2/16/16	1,584	1,570,191
Hotels, Restaurants & Leisure 3.0%		
Blackstone UTP Capital LLC, Loan, 7.75%, 11/06/14	1,247	1,246,875
Harrah's Operating Co., Inc.:		

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Term Loan B-2, 3.32%, 1/28/15	7	5,717
Term Loan B-3, 3.32%, 1/28/15	1,700	1,416,666
Term Loan B-4, 9.50%, 10/31/16	1,247	1,247,740
Six Flags Theme Parks, Inc., Exit Term Loan, 6.00%, 4/19/16	1,750	1,738,426
VML US Finance LLC (FKA Venetian Macau):		
New Project Term Loan, 4.80%, 5/27/13	832	802,194
Term B Delayed Draw Project Loan, 4.80%, 5/25/12	208	200,307
		6,657,925

Floating Rate Loan Interests (d)	Par (000)	Value
IT Services 2.6%		
Audio Visual Services Group, Inc., Tranche B Term Loan (First Lien), 2.55%, 2/28/14	USD 992	\$ 739,313
Ceridian Corp., US Term Loan, 3.35%, 11/09/14	1,470	1,347,806
First Data Corp.:		
Initial Tranche B-2 Term Loan, 3.03% - 3.04%, 9/24/14	1,817	1,527,898
Initial Tranche B-3 Term Loan, 3.03% - 3.04%, 9/24/14	1,613	1,357,853
SunGard Data Systems, Inc. (Solar Capital Corp.), Incremental Term Loan, 6.75%, 2/28/14	855	849,128
		5,821,998

Independent Power Producers & Energy Traders 0.5%		
Dynegy Holdings, Inc.:		
Term Letter of Credit Facility, 4.11%, 4/02/13	463	440,106
Tranche B Term Loan, 4.11%, 4/02/13	37	35,338
Texas Competitive Electric Holdings Co., LLC (TXU):		
Initial Tranche B-2 Term Loan, 3.79%- 4.07%, 10/10/14	483	370,721
Initial Tranche B-3 Term Loan, 3.79% - 3.80%, 10/10/14	227	173,001
		1,019,166

Industrial Conglomerates 0.2%		
Sequa Corp., Term Loan, 3.48% - 3.55%, 12/03/14	450	411,027

Insurance 0.1%		
Alliant Holdings I, Inc., Term Loan, 3.29%, 8/21/14	142	129,866

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Internet & Catalog Retail 0.3%

FTD Group, Inc., Tranche B Term Loan, 6.75%, 8/26/14	573	571,740
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Leisure Equipment & Products 0.1%

Fender Musical Instruments Corp.: Delayed Draw Loan, 2.61%, 6/09/14	109	95,647
Initial Loan, 2.55%, 6/09/14	216	189,347

284,994

Machinery 1.0%

Bucyrus International, Term Loan C, 4.50%, 1/26/16	425	422,521
Generac Acquisition Corp., Term Loan (First Lien), 2.79%, 11/10/13	145	133,395
LN Acquisition Corp. (Lincoln Industrial), Initial Term Loan (Second Lien), 6.09%, 1/09/15	1,000	880,000

Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
(Percentages shown are based on Net Assets)

Floating Rate Loan Interests (d)	Par (000)	Value
Machinery (concluded)		
Oshkosh Truck Corp., Term Loan B, 6.26%, 12/06/13	USD 780	\$ 779,082
		<u>2,214,998</u>
Media 9.5%		
Cengage Learning Acquisitions, Inc. (Thomson Learning), Tranche 1 Incremental Term Loan, 7.50%, 7/03/14	4,069	4,089,284
Charter Communications Operating, LLC: New Term Loan, 2.30%, 3/06/14	274	253,135
Term Loan B1, 7.25%, 3/25/14	625	624,903
Term Loan C, 3.55%, 9/06/16	2,725	2,536,559
Ellis Communications KDOC, LLC, Loan, 10.00%, 12/30/11	3,879	1,454,482
HMH Publishing Co., Ltd., Tranche A Term Loan, 5.53%, 6/12/14	1,899	1,738,878
Hanley-Wood, LLC (FSC Acquisition), Term Loan, 2.63% - 2.75%, 3/10/14	978	537,625
Mediacom Illinois, LLC (FKA Mediacom Communications, LLC), Tranche D Term Loan, 5.50%, 3/31/17	498	491,157
Newsday, LLC, Fixed Rate Term Loan, 10.50%, 8/01/13	3,250	3,412,500
Penton Media, Inc., Term Loan (First Lien), 5.00%, 8/01/14	728	526,167
Sinclair Television Group, Inc., Tranche B Term Loan, 6.75%, 10/29/15	462	462,260
Sunshine Acquisition Ltd. (FKA HIT Entertainment), Term Facility, 5.60%, 3/20/12	975	897,609
UPC Financing Partnership, Facility Term Loan, 3.93%, 12/30/16	1,750	1,690,208
Weather Channel, Term Loan B, 5.00%, 9/14/15	1,230	1,226,680
Worldcolor Press Inc. and Worldcolor (USA) Corp. (FKA Quebecor World, Inc.), Advance, 9.00%, 7/23/12	497	501,021
	703	682,031

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Yell Group Plc TPI, Term Loan A, 2.48%, 8/09/11				
				21,124,499

Metals & Mining 1.5%

Euramax International, Inc., Domestic Term Loan:				
10.00%, 6/29/13	858			800,899
14.00%, 6/29/13 (e)	879			820,470

Floating Rate Loan Interests (d)	Par (000)			Value
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Metals & Mining (concluded)

RathGibson, Inc., Loan (Debtor in Possession), 10.75%, 6/30/10	USD	1,796	\$	1,795,560
				3,416,929

Multi-Utilities 0.2%

FirstLight Power Resources, Inc. (FKA NE Energy, Inc.): Synthetic Letter of Credit, 2.81%, 11/01/13		44		41,814
Term B Advance (First Lien), 2.81%, 11/01/13		428		404,198
				446,012

Multiline Retail 0.6%

Dollar General Corp., Tranche B-2 Term Loan, 3.09% - 3.10%, 7/07/14		983		937,160
The Neiman Marcus Group, Inc., Term Loan, 2.25% - 2.28%, 4/06/13		535		487,965
				1,425,125

Oil, Gas & Consumable Fuels 1.5%

Big West Oil, LLC: Delayed Draw Loan, 4.50%, 5/15/14		546		538,661
Initial Advance Loan, 4.50%, 5/15/14		434		428,480
Initial Advance Loan, 12.00%, 1/26/15		750		751,250
Tronox Worldwide LLC: Tranche B-1 Term Loan, 9.00%, 6/24/10		750		752,344
Tranche B-2 Term Loan, 9.00%, 6/24/10		750		752,344
				3,223,079

Personal Products 0.3%

American Safety Razor Co., LLC:		600		247,500
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Loan (Second Lien), 10.50%, 1/30/14		
Term Loan (First Lien), 6.75%, 7/31/13	361	328,196
		<u>575,696</u>
Pharmaceuticals 0.9%		
Warner Chilcott Co., LLC, Term Loan A, 5.50%, 10/30/14	681	679,699
Warner Chilcott Corp.: Additional Term Loan, 5.75%, 4/30/15	316	315,422
Term Loan B-1, 5.75%, 4/30/15	526	525,235
Term Loan B-2, 5.75%, 4/30/15	494	492,898
		<u>2,013,254</u>

BLACKROCK SENIOR HIGH INCOME FUND, INC.

MAY 31, 2010

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Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)
 (Percentages shown are based on Net Assets)

Floating Rate Loan Interests (d)	Par (000)	Value
Professional Services 0.4%		
Booz Allen Hamilton, Inc., Term Loan C, 6.00%, 7/31/15	USD 998	\$ 996,004
Real Estate Management & Development 1.1%		
Realogy Corp., Synthetic Letter of Credit, 3.35%, 10/10/13	2,918	2,459,452
Software 0.5%		
Reynolds & Reynolds, Term Loan, 5.25%, 4/16/17	354	350,946
Telcordia Technologies, Inc., Term Loan B, 6.75%, 4/09/16	700	687,750
		1,038,696
Specialty Retail 0.7%		
Bass Pro Group LLC, Term Loan B, 5.00% - 5.75%, 4/06/15	350	348,023
Burlington Coat Factory Warehouse Corp., Term Loan, 2.67%, 5/28/13	355	325,839
Michaels Stores, Inc., Term Loan B-1: 2.56% - 2.81%, 10/31/13	733	666,983
4.81% - 5.06%, 7/31/16	298	283,082
		1,623,927
Textiles, Apparel & Luxury Goods 0.5%		
PVH/Hilfiger, US Term Loan B, 4.75%, 4/19/16	1,000	999,531
Wireless Telecommunication Services 1.2%		
Cavtel Holdings, LLC, Term Loan, 10.50%, 12/31/12 (e)	400	369,028
Digicel International Finance Ltd., Tranche A, 2.81%, 3/30/12	1,802	1,752,181
MetroPCS Wireless, Inc., Tranche B Term Loan, 2.56% - 2.62%, 11/03/13	497	476,282
		2,597,491
Total Floating Rate Loan Interests 56.0%		124,492,414

Other Interests (h)	Beneficial Interest (000)	
Auto Components 0.1%		
Intermet Liquidating Trust, Class A	320	79,148
Diversified Financial Services 0.4%		
J.G. Wentworth LLC Preferred Equity Interests (h)	(i)	951,244
Media 0.0%		
Adelphia Preferred Escrow	3	
Other Interests (j)	Beneficial Interest (000)	Value
Media (concluded)		
Adelphia Recovery Trust	USD 250	\$ 25
		25
Total Other Interests 0.5%		1,030,417

Warrants (k)	Shares	
Media 0.0%		
Charter Communications (Expires 11/30/14)	6,862	29,164
Total Warrants 0.0%		29,164

Total Long-Term Investments (Cost \$294,216,198) 120.7%	268,280,894
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Short-Term Securities

BlackRock Liquidity Funds, TempFund, Institutional Class, 0.16% (l)(m)	5,755,125	5,755,125
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Total Short-Term Securities (Cost \$5,755,125) 2.6%	5,755,125
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Total Investments (Cost \$299,971,323*) 123.3%	274,036,019
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Liabilities in Excess of Other Assets	(23.3)%	(51,800,449)
Net Assets	100.0%	\$ 222,235,570

* The cost and unrealized appreciation (depreciation) of investments as of May 31, 2010, as computed for federal income tax purposes, were as follows:

Aggregate cost	\$ 300,355,035
Gross unrealized appreciation	\$ 7,584,847
Gross unrealized depreciation	(33,903,863)
Net unrealized depreciation	\$ (26,319,016)

- (a) Non-income producing security.
- (b) Security exempt from registration under Rule 144A of the Securities Act of 1933. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (c) Issuer filed for bankruptcy and/or is in default of interest payments.
- (d) Variable rate security. Rate shown is as of report date.
- (e) Represents a payment-in-kind security which may pay interest/dividends in additional face/shares.
- (f) Convertible security.
- (g) Represents a step-down bond that pays an initial coupon rate for the first period and then a lower coupon rate for the following periods. Rate shown reflects the current yield as of report date.

Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)

- (h) The investment is held by a wholly owned taxable subsidiary of the Fund.
- (i) Amount is less than \$1,000.
- (j) Other interests represent beneficial interest in liquidation trusts and other reorganization entities and are non-income producing.
- (k) Warrants entitle the Fund to purchase a predetermined number of shares of common stock and are non-income producing. The purchase price and number of shares are subject to adjustment under certain conditions until the expiration date.
- (l) Represents the current yield as of report date.
- (m) Investments in companies considered to be an affiliate of the Fund, for purposes of Section 2(a)(3) of the Investment Company Act of 1940, as amended, were as follows:

Affiliate	Shares at February 28, 2010	Net Activity	Shares at May 31, 2010	Income
BlackRock Liquidity Funds, TempFund, Institutional Class	1,938,484	3,816,641	5,755,125	\$ 940

Foreign currency exchange contracts as of May 31, 2010 were as follows:

Currency Purchased		Currency Sold		Counterparty	Settlement Date	Unrealized Appreciation
USD	590,411	CAD	599,500	Citibank NA	7/28/10	\$ 20,861

Credit default swaps on single-name issues buy protection outstanding as of May 31, 2010 were as follows:

Issuer	Pay Fixed Rate	Counterparty	Expiration	Notional Amount (000)	Unrealized Appreciation
K. Hovnanian Enterprises, Inc.	5.00%	Goldman Sachs Bank USA	December 2011	USD 460	\$ 4,992
K. Hovnanian Enterprises, Inc.	5.00%	Goldman Sachs Bank USA	December 2012	USD 225	2,662
Boston Scientific Corp.	1.00%	Goldman Sachs Bank USA	December 2014	USD 500	16,994
Total					\$ 24,648

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For Fund compliance purposes, the Fund's industry classifications refer to any one or more of the industry sub-classifications used by one or more widely recognized market indexes or rating group indexes, and/or as defined by Fund management. This definition may not apply for purposes of this report, which may combine such industry sub-classifications for reporting ease.

Schedule of Investments (continued)

BlackRock Senior High Income Fund, Inc. (ARK)

Fair Value Measurements - Various inputs are used in determining the fair value of investments, which are as follows:

Level 1 price quotations in active markets/exchanges for identical assets and liabilities

Level 2 other observable inputs (including, but not limited to: quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market-corroborated inputs)

Level 3 unobservable inputs based on the best information available in the circumstances, to the extent observable inputs are not available (including the Fund's own assumptions used in determining the fair value of investments)

The inputs or methodologies used for valuing securities are not necessarily an indication of the risk associated with investing in those securities. For information about the Fund's policy regarding valuation of investments and other significant accounting policies, please refer to the Fund's most recent financial statements as contained in its annual report.

The following tables summarize the inputs used as of May 31, 2010 in determining the fair valuation of the Fund's investments:

Valuation Inputs	Level 1	Level 2	Level 3	Total
Assets:				
Investments in Securities:				
Long-Term Investments:				
Common Stocks	\$ 2,760,203	\$ 1,728,560	\$ 1,202,021	\$ 5,690,784
Corporate Bonds		130,115,446	6,922,667	137,038,113
Floating Rate Loan Interests		107,107,100	17,385,316	124,492,416
Other Interests			1,030,417	1,030,417
Warrants	29,164			29,164
Short-Term Securities	5,755,125			5,755,125
Liabilities:				
Unfunded Loan Commitments			(18,424)	(18,424)
Total	\$ 8,544,492	\$ 238,951,106	\$ 26,521,997	\$ 274,017,595

Derivative Financial Instruments¹

Valuation Inputs	Level 1	Level 2	Level 3	Total
Assets:				
Credit contracts		\$ 24,648		\$ 24,648
Foreign currency exchange contracts		20,861		20,861
Total		\$ 45,509		\$ 45,509

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¹ Derivative financial instruments are swaps, and foreign currency exchange contracts which are shown at the unrealized appreciation/depreciation on the instrument.

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BLACKROCK SENIOR HIGH INCOME FUND, INC.

MAY 31, 2010

Schedule of Investments (concluded)

BlackRock Senior High Income Fund, Inc. (ARK)

The following table is a reconciliation of Level 3 investments for which significant unobservable inputs were used in determining the fair value.

	Common Stocks	Corporate Bonds	Floating Rate Loan Interests	Other Interests	Unfunded Loan Commitments	Total
Balance, as of February 28, 2010	\$ 179,112	\$ 8,012,790	\$ 17,012,972	\$ 1,066,529		\$ 26,271,403
Accrued discounts/premiums		19,891	14,306			34,197
Net realized gain (loss)			(156,102)	75,231		(80,871)
Net change in unrealized appreciation/depreciation ²	178,467	(1,110,098)	1,134,688	(3,870)	\$ (18,424)	180,763
Purchases		(1)	2,585,181			2,585,180
Sales		85	(5,345,210)	(107,473)		(5,452,598)
Transfers in ³	960,092		7,882,709			8,842,801
Transfers out ³	(115,650)		(5,743,228)			(5,858,878)
Balance, as of May 31, 2010	\$ 1,202,021	\$ 6,922,667	\$ 17,385,316	\$ 1,030,417	\$ (18,424)	\$ 26,521,997

² The change in unrealized appreciation/depreciation on securities still held at May 31, 2010 was \$(419,078).

³ The Fund's policy is to recognize transfers in and transfers out as of the end of the period of the event or the change in circumstances that caused the transfer.

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Item 2 – Controls and Procedures

2(a) – The registrant's principal executive and principal financial officers or persons performing similar functions have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act")) are effective as of a date within 90 days of the filing of this report based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13(a)-15(b) under the Securities Exchange Act of 1934, as amended.

2(b) – There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3 – Exhibits

Certifications – Attached hereto

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

BlackRock Senior High Income Fund, Inc.

By: /s/ Anne F. Ackerley
Anne F. Ackerley
Chief Executive Officer of
BlackRock Senior High Income Fund, Inc.

Date: July 23, 2010

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By: /s/ Anne F. Ackerley
Anne F. Ackerley
Chief Executive Officer (principal executive officer) of
BlackRock Senior High Income Fund, Inc.

Date: July 23, 2010

By: /s/ Neal J. Andrews
Neal J. Andrews
Chief Financial Officer (principal financial officer) of
BlackRock Senior High Income Fund, Inc.

Date: July 23, 2010

