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The Bare Necessities: A taxonomy of S&P 500 bear markets

Invesco

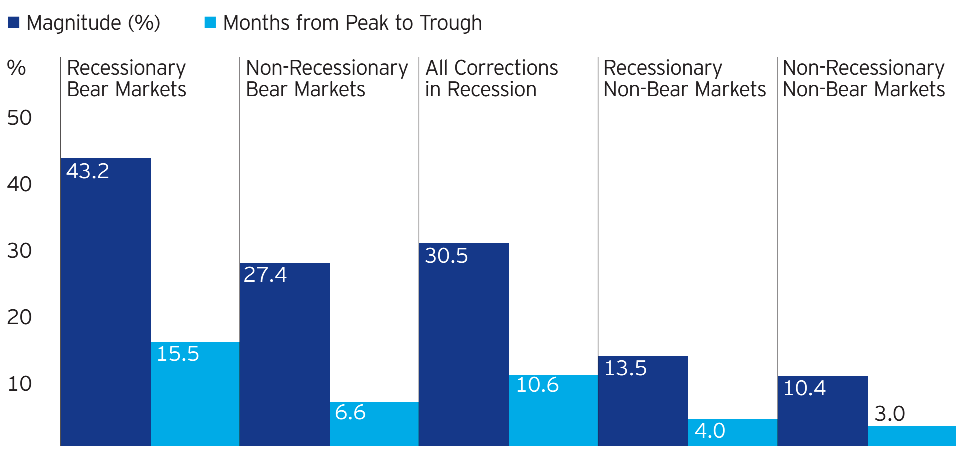
Bears are beautiful to look at from a distance. However, sometimes they move closer to us and can be scary. This is why it is important to know their habits and characteristics.

Bears can inspire an instinctive sympathy; sometimes they can even look tender. Who doesn't remember with a smile the funny and clumsy Baloo that, in Disney's movie "The Jungle Book," sings to Mowgli the song "The Bare Necessities," which sums up his philosophy of life? But bears are nice as long as you see them from afar – up close, they are big, they can get ferocious, and their growl can intimidate. They can be especially scary for investors – the bear evokes sharp declines in stock markets, sometimes associated with other unpleasant situations, such as recessions.

It is good that the bear, in equity markets as in nature, is a rather reserved animal. It doesn't get out often and does not like to be seen around. Sometimes, however, a bear comes out into the open, not always preceded by clear signs of his intentions. Whoever is near the bear will likely try to escape far and quickly. If the encounter was a surprise, the escape is often hasty and messy.

A situation like this has been happening recently in financial markets, equities in particular. There had been some rustling of leaves, some dried twigs crushed by a timidly moving bear's paws. But the global explosion of the COVID-19 pandemic has made the bear angry, and now the world is divided between those who ran away in a disorderly way to escape the bear's wrath and those who instead lie in a sheltered corner, waiting for a good opportunity to regain possession of the forest.

Chart 1: S&P 500 drawdowns: Magnitude and time to reach the bottom



Source: Bloomberg, NBER, Invesco. Performance in local currency, dividends excluded, as of March 31, 2020 .
Past performance is not a guide to future returns.

The main drawdowns of the S&P 500

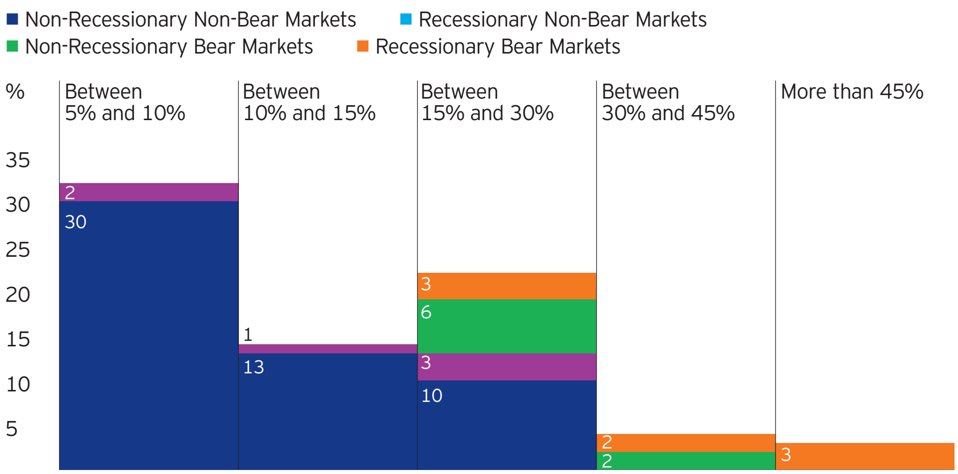
Metaphor aside, the information we have about sizeable stock market declines is very interesting. Prior to 2020, we identified 75 correction episodes of at least 5% worth noting.[1] Taking into account the global leader among equity indices, the Standard & Poor's 500, the drop exceeded 20% from the peak of Feb. 19 (the last historical high of the index), enough to consider the descent a bear market.

History teaches us that bear markets are not all the same. As the stock market tends to reflect both the present and, above all, expectations of future events, a sharp decline in the stock market often indicates the expectation of an economic shock, typically a recession. When the bear market happens at a time when the economy is already in recession, things usually go much worse than when the recession is not there, as shown in Chart 1: an average drop of 43.16% (first blue bar on the left) compared to 27.37% without recession (second blue bar from the left).

It is also interesting to note that the recent decline of the S&P 500 from its high on Feb. 19, 2020, to the mid-March lows led to a drawdown that is similar in magnitude to the average, including bear markets and non-bear markets, that has taken place in recession (purple bar). And with a very rapid market crash, we arrived there in less than three weeks instead of in about 10 and a half months, as happened on average (green bar of the central group).

From the point of view of the distribution of corrections by magnitude, as we can expect, the vast majority of corrections of no more than 15%, which are not bear markets (obviously, since the bear market is a drop of at least 20%), does not take place in recession: a total of 43 observations out of 46, while only three drawdowns that did not exceed 15% occurred in recession (1953, 1960 and 1980).

Chart 2: Different kinds of drawdowns for the S&P 500



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The most interesting group: Drawdowns of an "intermediate" magnitude

The most interesting group to consider is that of the drawdowns between 15% and 30%, which includes both bear markets and non-bear markets. Between 1927 and 2020, the S&P 500 gave us 22 such instances to analyze (shown in Chart 2).

Thirteen of them were non-bear markets: 10 occurred when the US economy was not in recession, and three occurred in recession (1948/49, 1957 and 1990).

The remaining nine deserved the status of bear market, as the stock market dropped beyond 20%. Out of these nine, three happened in recession and six did not. This should not come as much of a surprise because the ordinary condition of the economy is not to be in recession.

When the bear gets angry

When the bear is really angry, and the descent exceeds 30%, in most of the cases we observed that the economy was in recession. In particular, in half of the four declines between 30% and 45% (1973-1974 and 2000-2001) and in all three drawdowns that exceeded 45% (1929-1932, 1937-1938 and 2007-2009).

After the decline comes the recovery

Then it is interesting to understand how long it has taken, on average, to recover in the different kinds of corrections and bear markets. This is what the green bars of Chart 3 show us. They tell us exactly how many months it has taken to get back to the peaks that preceded a correction and exceed them.

The deeper the fall, the worse the bear, the longer the time to recover

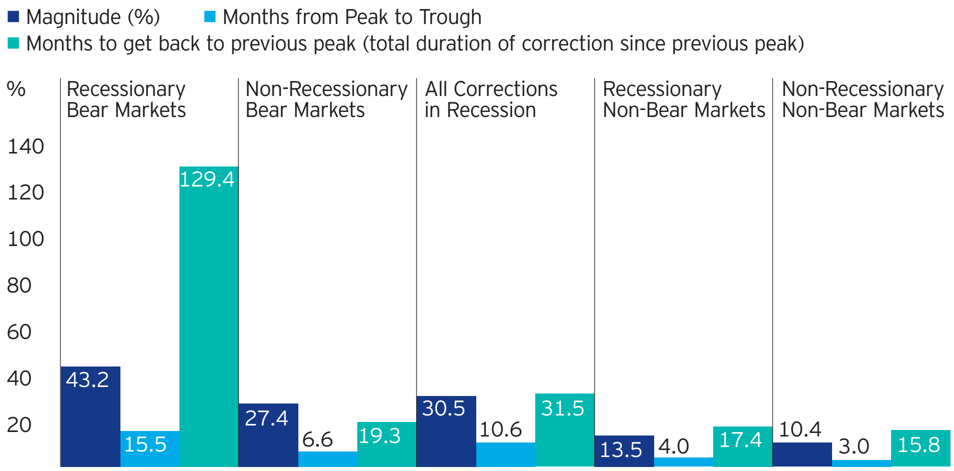
In Chart 3 we can see that, if we exclude the central block of bars (which includes all the market falls, bear markets and not, that took place with the US economy in recession), the height of the green bars grows as we move from right to left. That is, historically it has taken on average a little less than a year and four months to recover the drawdown of a non-recessionary, non-bear market (far right in the chart). Three months to go from the peak to the bottom, with an average decrease of 10.43%, and little longer than a year to recover.

Average duration and average depth of the drawdowns increase as we move to the left. The six non-bear markets that occurred during a recession have been more serious than the 54 that occurred not in recession.

Then come the eight non-recessionary bear markets: they had an average decline of 27.37%, which unfolded over little more than six and a half months, and a total average duration, recovery included, of little over a year and a half.

The most dangerous beast is the one on the far left of Chart 3: a bear market taking place in recession. A situation that on average took 15 and a half months to reach a bottom and generated average losses of 43.16%. The average total duration of these eight episodes (in dark blue Recessionary Bear Markets in Chart 2) was 10 years and nine months to recover the previous peak, with a particularly brutal case: the collapse of 1929. Due to the Great Depression, the S&P 500 took almost three years to fall to the minimum, losing over 86% of its initial value, and a total time of over 25 years to get back to the previous peak. Within those 25 years, six other episodes of bear market occurred, the largest of which took place during the economic fallout of 1937 (-48.41%).

Chart 3: Magnitude, duration and time to recovery of S&P 500 corrections



Source: Bloomberg, NBER, Invesco. Performance in local currency, dividends excluded, as of March 31, 2020

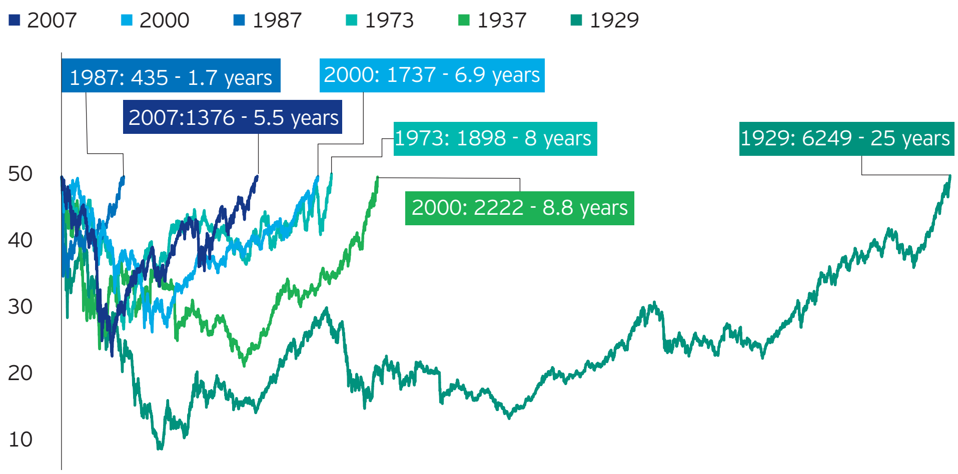
Past performance is not a guide to future returns.

Conclusions

This note's goal is to provide readers with information about the past that can be useful to interpret the present. A taxonomy is about description, not about prediction. There is little we can say about the future. At the moment the S&P 500's behavior is reminiscent of that of 1987. Of all bear markets, that would be the most favorable precedent to follow, but we have no evidence to suggest it might take that path. (Although I personally believe that, thanks to all the economic policy intervention packages, financial markets could recover more quickly than the economy from the shock of COVID-19.)

Almost half of the bear markets we observed for the S&P 500 (seven out of 16 in total) took place in the long tail of the Great Depression, and out of these seven, six happened before the end of World War II. So one message for global policymakers today could be this: In order to support markets in the best possible way, the first goal is to try to avoid an economic depression. The second-deepest bear market was the one between the end of 2007 and the beginning of 2009 (-56.24%). Another message for policymakers, then, is that, after the experience of the Global Financial Crisis and the Great Recession that followed it, avoiding general shocks to the global financial infrastructure is a critically important goal, too. Monetary policymakers, the central banks, seem to have learned this lesson.

Chart 4: Time to recovery for some S&P 500 bear market (days)



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In financial markets, as in history, the past never repeats exactly. We can consider this examination of the deep corrections and bear markets of the S&P 500 as the preparation for a photographic safari. Maybe the bear won't show up, or maybe it will in a new and surprising way that we've never seen before. The best thing we can do to increase our chances of getting back home safe and with some beautiful pictures is to study the bear's behavior and habits as accurately as possible, so that we are not caught by surprise or unprepared.

List of the 76 episodes of significant S&P 500 corrections and bear markets[1]

Number	Beginning	End	Magnitude	Economy in recession?	Type of drawdown
1	9/6/29	7/8/32	-86.15%	Recession	Bear Market
2	7/7/33	3/29/35	-29.30%	Recession	Bear Market
3	3/5/37	6/18/37	-16.70%		Non-Bear Market Correction
4	8/13/37	4/1/38	-48.41%	Recession	Bear Market
5	11/11/38	4/7/39	-22.19%		Bear Market
6	9/15/39	5/24/40	-29.92%		Bear Market
7	11/8/40	4/18/41	-16.30%		Non-Bear Market Correction
8	7/25/41	4/24/42	-26.98%		Bear Market
9	7/16/43	11/26/43	-11.08%		Non-Bear Market Correction
10	5/31/46	11/22/46	-26.33%		Bear Market
11	2/7/47	5/16/47	-13.40%		Non-Bear Market Correction
12	7/25/47	2/13/48	-13.87%		Non-Bear Market Correction
13	6/11/48	9/17/48	-7.20%		Non-Bear Market Correction
14	10/22/48	6/10/49	-16.86%	Recession	Non-Bear Market Correction
15	6/23/50	7/14/50	-12.41%		Non-Bear Market Correction
16	5/4/51	6/29/51	-7.95%		Non-Bear Market Correction
17	8/8/52	10/24/52	-5.95%		Non-Bear Market Correction
18	1/2/53	6/12/53	-10.25%		Non-Bear Market Correction
19	8/7/53	9/11/53	-6.62%	Recession	Non-Bear Market Correction
20	9/23/55	10/14/55	-9.66%		Non-Bear Market Correction
21	4/6/56	5/25/56	-8.66%		Non-Bear Market Correction
22	8/3/56	9/28/56	-8.64%		Non-Bear Market Correction
23	7/12/57	12/20/57	-16.56%	Recession	Non-Bear Market Correction
24	7/31/59	9/18/59	-7.30%		Non-Bear Market Correction
25	1/1/60	1/29/60	-7.15%		Non-Bear Market Correction
26	6/10/60	10/21/60	-8.02%	Recession	Non-Bear Market Correction
27	12/8/61	6/22/62	-26.84%		Bear Market
28	8/24/62	10/26/62	-8.46%		Non-Bear Market Correction
29	5/14/65	6/25/65	-7.81%		Non-Bear Market Correction
30	2/11/66	10/7/66	-21.97%		Bear Market
31	10/6/67	11/3/67	-5.63%		Non-Bear Market Correction
32	1/12/68	3/22/68	-8.58%		Non-Bear Market Correction
33	11/29/68	12/12/69	-16.20%		Non-Bear Market Correction
34	1/2/70	5/22/70	-22.31%	Recession	Bear Market
35	4/23/71	11/19/71	-11.96%		Non-Bear Market Correction
36	1/5/73	7/6/73	-15.51%		Non-Bear Market Correction
37	10/12/73	10/4/74	-44.06%	Recession	Bear Market
38	6/27/75	9/12/75	-12.14%		Non-Bear Market Correction
39	12/31/76	3/3/78	-18.62%		Non-Bear Market Correction
40	9/8/78	11/17/78	-11.58%		Non-Bear Market Correction
41	10/5/79	10/26/79	-9.62%		Non-Bear Market Correction
42	2/8/80	4/18/80	-14.75%	Recession	Non-Bear Market Correction
43	6/12/81	8/6/82	-22.31%	Recession	Bear Market
44	1/6/84	7/20/84	-11.66%		Non-Bear Market Correction
45	7/19/85	9/27/85	-7.09%		Non-Bear Market Correction
46	8/29/86	9/12/86	-8.80%		Non-Bear Market Correction
47	8/21/87	12/4/87	-33.34%		Bear Market
48	10/6/89	10/27/89	-6.61%		Non-Bear Market Correction
49	7/13/90	10/12/90	-18.32%	Recession	Non-Bear Market Correction
50	1/14/94	6/24/94	-6.76%		Non-Bear Market Correction
51	5/24/96	7/26/96	-5.86%		Non-Bear Market Correction
52	2/14/97	4/11/97	-8.76%		Non-Bear Market Correction
53	7/17/98	10/9/98	-17.05%		Non-Bear Market Correction
54	7/16/99	10/15/99	-12.08%		Non-Bear Market Correction
55	12/31/99	2/25/00	-9.25%		Non-Bear Market Correction
56	3/24/00	4/14/00	-11.19%		Non-Bear Market Correction
57	9/1/00	9/21/01	-36.49%	Recession	Bear Market
58	3/15/02	10/4/02	-31.35%		Bear Market
59	11/29/02	3/7/03	-11.47%		Non-Bear Market Correction
60	3/5/04	8/6/04	-8.03%		Non-Bear Market Correction
61	3/4/05	4/15/05	-6.51%		Non-Bear Market Correction
62	5/5/06	7/14/06	-6.76%		Non-Bear Market Correction
63	7/13/07	8/3/07	-7.69%		Non-Bear Market Correction
64	10/12/07	3/6/09	-56.24%	Recession	Bear Market
65	1/8/10	2/5/10	-6.88%		Non-Bear Market Correction
66	4/23/10	7/2/10	-15.99%		Non-Bear Market Correction
67	4/29/11	8/19/11	-17.61%		Non-Bear Market Correction
68	3/30/12	6/1/12	-9.26%		Non-Bear Market Correction
69	9/14/12	11/16/12	-7.22%		Non-Bear Market Correction
70	9/19/14	10/17/14	-6.15%		Non-Bear Market Correction
71	7/17/15	9/4/15	-9.66%		Non-Bear Market Correction
72	11/6/15	1/15/16	-10.43%		Non-Bear Market Correction
73	8/12/16	11/4/16	-4.53%		Non-Bear Market Correction
74	1/26/18	3/23/18	-9.91%		Non-Bear Market Correction
75	9/21/18	12/21/18	-17.51%		Non-Bear Market Correction
76	2/14/20	3/27/20	-24.82%		Bear Market

1. The complete list of the 76 episodes of S&P 500 large declines from the beginning (1927) to date is reproduced in the following table. These are the main negative movements, of at least -5%. There was a certain discretion in the selection of the smaller movements, but all major drawdowns are included. The table considers only changes in price, therefore excluding dividends, in US dollars. The cells in beige indicate the declines of up to -10%, in yellow those between -10% and -15%, in orange those between -15% and -30%, in pink those between -30% and -45%, and in red those of -45% or lower. The fall of 2020 is currently excluded from the statistics in the note. **Past performance is not a guide to future returns.**

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