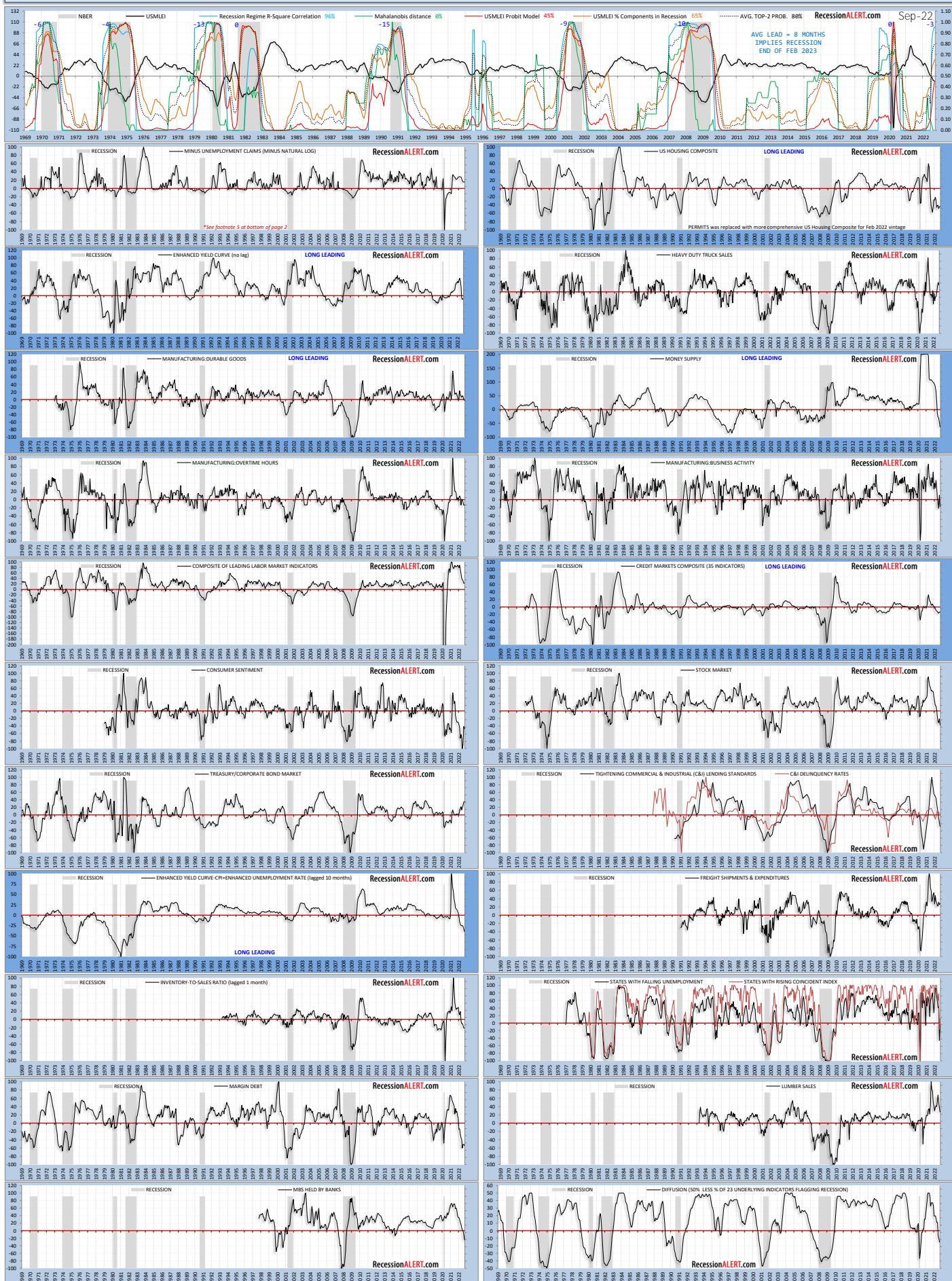
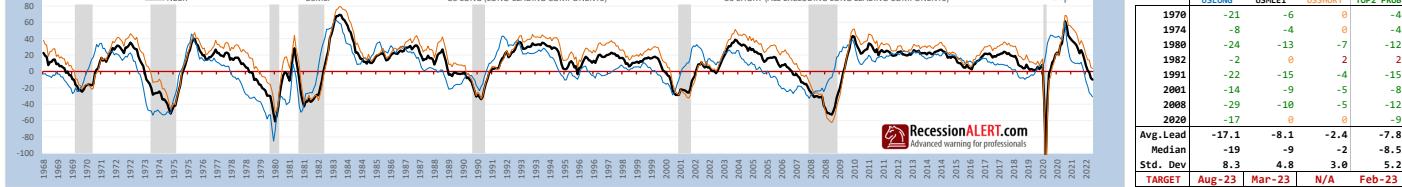
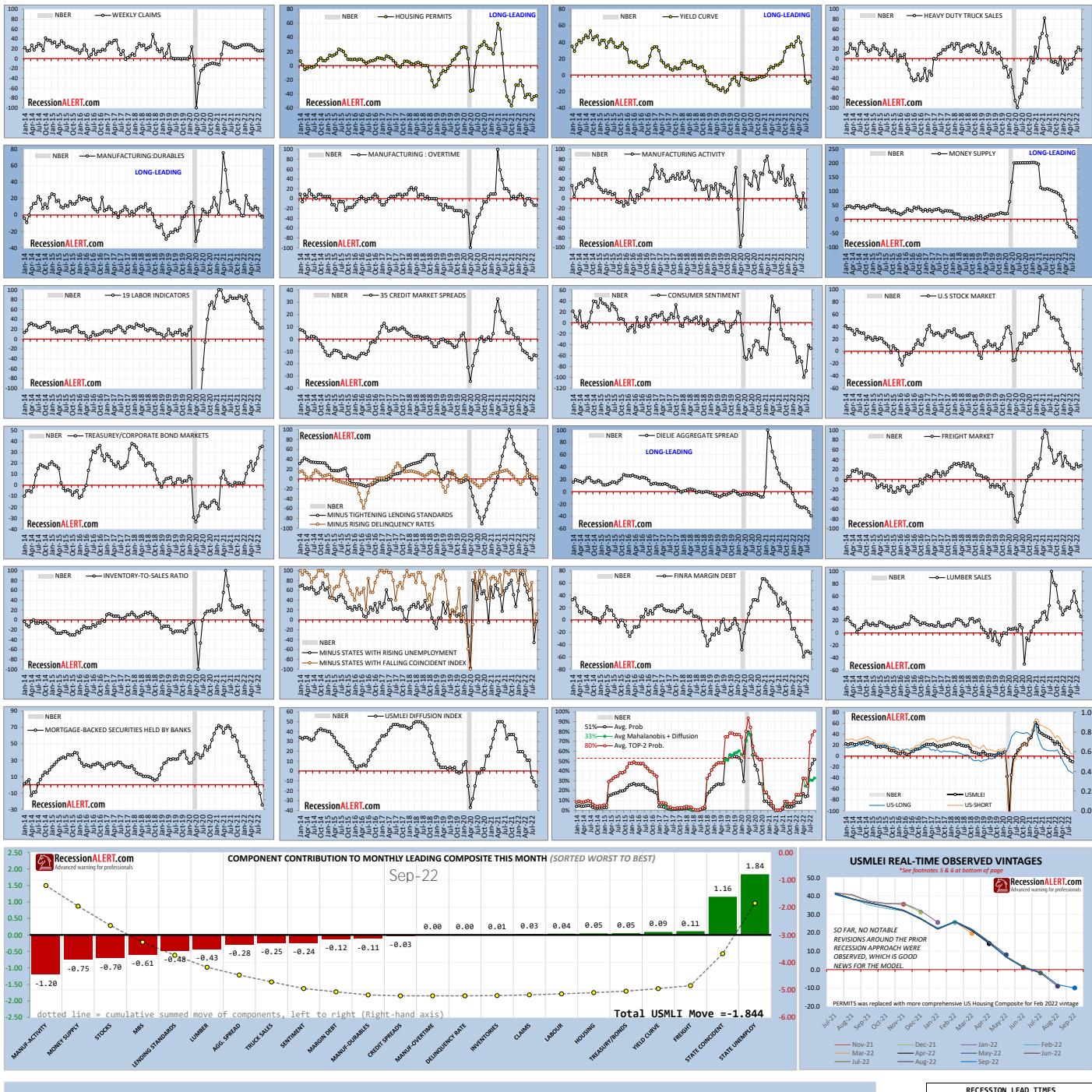




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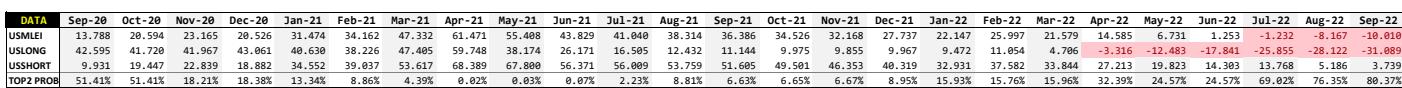




MODEL RISK EXCLUSION: Although many of our models rely heavily on back-testing, optimisation and probability methods, please note that past performance is NO GUARANTEE for future returns. No system devised by man can perfectly predict the future all the time, let alone the future of markets and economies. We believe that the most accurate way to predict recessions is to use a statistical approach. The likelihood of calling the start and end to recessions is the greatest. In the midst of all the best mathematical models, you can have geo-political events, wars, terrorist attacks, natural disasters, pandemics and even nuclear accidents that tip everything upside down. This is always a risk factor you need to factor in on any recession call no matter how confident you are in a signal. The USMLEI are created through mathematical and statistical optimisation techniques that best fit the historical NBER data. There is no guarantee that out-of-sample performance will match that of prior in-sample performance.

EXTERNAL RISK EXCLUSION : Recessionary risk from possible external shocks have not been built into the probability models, namely a steep and protracted Euro-area recession, an EU member sovereign default or credit event, hard landing in China, failure to congress to reach agreement on deficit reductions, further possible U.S. credit rating downgrades, Iran tensions/conflicts, terrorist attacks, natural disasters, oil-price shocks and disease pandemics. The probability models just look at what we are seeing in the US economy itself and do not take into account these external factors (since in our view, this would be speculation and we just want to deal with hard real numbers). Should these external shocks come to light or their risks elevate, they will certainly show up in the US economy and/or the various indicators somewhere and then be detected by our models.

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¹REVISIONS NOTE : Monthly revisions & occasional prior month forecasts for some data may result in figures in the table above changing slightly from month-to-month.

²NOTE 2 : US SHORT is USMLEI less the long-leading components. USMLI is all the long-leading and short-leading components.

³HOUSING : We have switched from only looking at Housing PERMITS, to incorporate the more comprehensive Housing Market Index (USMHI) on Feb 2022 vintage

⁴WEEKLY CLAIMS : From July 20 print, we moved from [minus initial claims capped to historical low] to [minus natural log of initial claims], to fully capture extent of recent unprecedented claims figures without affecting past sensitivity of series. Changes to USMLEI can be observed in vintages chart & only affects recent times.

⁵From March 2021 print, we moved from [% annual change in M1REAL] to [natural log of % annual change in M1REAL]. We also used new labor market composite with uncapped (full) component declines to fully reflect deterioration in labor market around recent recession, which led to lower recession trough for USMLEI

DATA	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22
USMLEI	13,788	28,594	23,165	26,526	31,474	34,162	47,332	61,471	55,488	43,829	41,048	38,334	36,386	34,526	32,168	27,737	22,147	25,997	21,579	14,585	6,731	1,253	-1,232	-8,167	-10,010
USLONG	42,595	41,720	41,967	43,061	40,630	38,226	47,405	59,748	38,174	26,171	16,505	12,432	11,144	9,975	9,855	9,967	9,472	11,054	4,766	-3,316	-12,483	-17,841	-25,855	-28,122	-31,089
USHORT	9,931	19,447	22,839	18,882	34,552	39,037	53,617	68,389	67,800	56,371	56,089	53,759	51,605	49,501	46,353	40,319	32,931	37,582	33,844	27,213	19,823	14,303	13,768	5,186	3,739
TOP2 PROB	51.41%	51.41%	18.21%	18.38%	13.34%	8.86%	4.39%	0.02%	0.03%	0.07%	2.23%	8.81%	6.63%	6.65%	6.67%	8.95%	15.93%	15.76%	15.96%	32.39%	24.57%	24.57%	69,025	76,35%	80,37%