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Market Commentary
September 2023



Russo-Ukraine War

The critical sector of the front for the Ukrainian counteroffensive is the central sector. Here the vital Russian supply highway runs south of the city of Mariupol along the shoreline of the sea of Azov. The Russian position in Southern Ukraine and Crimea is sustained only by traffic along the shoreline corridor and across the Kerch strait bridge. The Ukrainians have cut the Kerch strait bridge twice and have cut a bridge crossed by the shoreline highway once. If they were in a position to decisively cut the shoreline highway, the Russians would face a grave choice – either abandon their conquests in the South or risk losing both their conquests and the occupying forces. For the Ukrainians to block the road it is not necessary that they take Mariupol or overrun the road itself. It is enough to bring it within range of their field artillery, i.e. reach a distance of about 20km inland from the road. The Russians have protected this essential corridor with a triple line of field fortifications (mine fields, trench lines, tank obstacles etc.) backed by artillery firing positions. After two months of work, the Ukrainians have decisively breached the first line in a portion of the front and are now in contact with the second line. The Russians do not have fresh troops to man the second line, but rather are pulling back first line defenders and shifting units around laterally in an attempt to stiffen the line.

The Russians are simultaneously meeting increasing strain from another factor. At the start of the Ukrainian offensive the Russians blew up a dam across the Dnieper river creating an impassable mud barrier to Ukrainian advance downstream of the dam. This obstacle allowed the Russians to thin their defensive forces in this section and transfer the troops northward to meet the Ukrainian push. But summer

heat has hardened the ground to the point where Ukrainian effort in this section must now be provided for. Russian manpower thus faces increasing demands at a time of battle weariness and attrition.

The Russians also face a vital technological deficit. In the Russian art of war pride of place goes to the artillery. The Russians mass great artillery batteries whose gun fire can be rapidly altered to create a mobile punch, concentrated for a mighty local punch or dispersed for wide area effect. In a defensive operation, artillery can cover forward laid mine fields and thus defeat demining operations. The artillery plays a role similar to that which the US awards to the tactical air force. However, these static artillery batteries are vulnerable to counter-battery fire. The Russians protect their artillery by developing their own counter-battery capability. Unfortunately for the Russians, their technology lags that of NATO by a generation and on the battlefield the soldier with obsolete equipment is soon a dead soldier. NATO has supplied the Ukrainians with mobile artillery and counter battery radars both of which are effective at greater range than the Russian equipment. The Ukrainians slowly pick off the Russian's counter battery defenses while staying out of range of Russian counter fire and then either take down the Russian artillery parks or force them to fall back. Stripped of protecting fire, even the most extensive mine field is ultimately breached and leaving the outlying parts intact then turns the field into flank protection for the breacher's advance. So the Ukrainians grind forward. The Russians have not shown a technological solution to this problem and they lack manpower reserves with which to stiffen their lines. The Russians have instead attempted to draw off Ukrainian forces by mounting diversionary attacks. They have made some progress in the northern sector, but have not yet developed a threat adequate to force a pivot in the Ukrainian force dispositions. In fact, the Ukrainians have more successfully created a diversion of their own around Bakhmut and forced the Russians to commit a substantial amount of their best forces to holding this symbolic but inessential outpost.

Western experts are uncertain how this will play out. A leak from US intelligence agencies was skeptical of ultimate

Ukrainian success. General Petraeus, however, gave them better odds. The defender's dilemma is always that they must be victorious along the entire line while an attacker need only be victorious at a point and can choose the point of concentrated attack. As troops absorb casualties, grow battle weary and lose mobility the defender's challenge increases.

Under pressure from Western economic warfare the ruble has collapsed – losing 26% of its value since January 1 and falling below the symbolic value of one US penny per ruble. Russia's central bank has been able to stabilize the ruble for the moment by raising its deposit rate from 7.5% to 12%. This should choke off the domestic consumer economy and reduce import pressure from that source. With defense industries pulling in increasing amounts of imports and exports increasingly cut back by western sanctions, Russia can no longer maintain trade balance and a normal consumer sector. But a collapsing currency and contracting domestic sector speaks to the populace of impending defeat in a way no state propaganda can hope to offset.

The top leadership of the Wagner mercenary company was killed in a plane crash outside Moscow broadly assumed to have been organized by Putin. Lukashenko – the dictator of Belarus – seemed to be auditioning for the role of Kremlin court jester with his assurance that Putin could not be involved as the assassination was lacking in finesse. Presumably Lukashenko finds the long list of defenestrated Putin opponents to have made a more graceful final descent.

While this commentary focuses mainly on technical aspects of the conflict, we do not wish to ignore the dimension of human suffering. It is evident that the Russian mafia is actively trafficking Ukrainian women around the globe. We are concerned for the fate of the 750,000 Ukrainian children removed from their home land about whom there is far too little information.



China

China's economy has tipped into recession. Unemployment among recent college graduates is said to be 26%. The real estate sector has seen the Evergrande firm topple into bankruptcy after a year of hovering on the brink. Financial stress is present elsewhere in the sector and extends into local government finance. A cyclical slowdown is beginning to show signs of possibly deepening into a more significant event. At the end of its long post war growth Japan fell in to a decade long economic depression. China also might be coming to the end of a major growth phase. Alternately, China's economic book cooking may have finally caught up with it in the form of a profound financial crisis.

China's foreign diplomacy continues along its own unique course of winning friends and influencing people abroad. The Chinese and Russians sent a joint naval flotilla to cruise the Aleutians – a string of frigid barren volcanic islands owned by the US and mainly inhabited by sea birds. The US sent four destroyers to watch the flotilla. No doubt the sailors of all three nations wished this bit of great power choreography could have been relocated to warmer seas with more enticing port calls. Further south the Chinese Navy (quixotically termed the People's Liberation Army Navy) turned its high pressure hoses on the Philippine Coast Guard, causing the US to remind China that by treaty an attack on the Philippines is an attack on the US. In Laos the Chinese had a refugee Chinese human rights lawyer arrested. The man was attempting to flee to the US where his family has been granted asylum. China's declared policy is that refugee human rights activists should live in constant fear of Chinese reprisals no matter what country they try to hide in.

President Biden hosted a summit at Camp David of Japan and South Korea's leaders. Japan and South Korea have an unhappy history together and are commercial rivals, but both

countries are directly threatened by China and North Korea. Those threats seem to be submerging historic animosities. President Biden also issued an executive order cutting off certain technology transfers to China. However the scope of the order is limited to only the most advanced technologies of highest strategic importance.

China countered at the BRICs summit. It would like to turn BRICs (a loose association of China, Russia, India, Brazil and South Africa) into an anti-US block under China's leadership. China seems unlikely to succeed in this goal while its economy falters and its troops periodically mount border incursions into India. For the moment, BRICs is discussing adding new members while postponing any decision about the character of the group.

China has succeeded in blocking a UN inquiry into its mistreatment of its Uighur minority. Allegedly the Chinese are holding over a million people in prison camps. A nasty rumor claims that prisoners are executed to make their organs available for transplantation – an accusation, which if true, would amount to industrial farming of humans. China's evident desire to keep these activities under the veil of domestic secrecy raise concerns about ongoing



Elsewhere

Saudi Arabia and Israel appear to be moving towards normalization of relations. In concert with this move, Saudi Arabia is renewing financial support for the relatively moderate Palestinian faction based in the West Bank. We appear to be moving towards a division of the Middle East into two blocks. One block comprises Saudi Arabia, the Gulf States, Egypt, Jordan, Israel, the west bank Palestinian Authority, the Kurds and Iraq. The other block comprises Iran, Syria, Hezbollah and Hamas. The driving force for this alignment is the threat created by Iran's pending acquisition of nuclear weapons, its continuing alliance with vicious

terrorist groups and its uncompromising political philosophy.

Thailand appears moving towards internal reconciliation of its political factions. Neighboring Myanmar remains badly divided. Cambodia is executing a father-to-son political transition.

French intervention has been notably absent from its former colonies in sub-Saharan Africa. Russia has been attempting to position itself as the patron of undemocratic regimes in the region. Formerly Russia's proxy was the Wagner Group, but it is now attempting to nationalize that effort as well. China also is deeply interested in filling power vacuums in Africa.



US

The district prosecutor in Georgia's Fulton county has brought in an indictment under the state's RICO act. It is alleged that 49 people conspired together to steal Georgia's electoral votes in the 2020 election on behalf of then President Trump. Nineteen of the conspirators are indicted on 41 counts. The most prominent indictees are now former President Trump, his former chief of staff Mark Meadows and his former lead attorney Rudolph Giuliani. Under the conspiracy statutes all members of the conspiracy are guilty of any crime committed by a co-conspirator even if they were not personally involved. A hair brained scheme by alleged conspirator Sidney Powell and some of her more zealous operatives to steal voting machines and apparently tamper with them to create false evidence of electoral fraud is one such source of exposure. President Trump's notorious calls to Brad Raffensburger, Mike Pence and Rusty Bowers apparently suborning them into violations of their oaths of office are another source of liability. Finally creation of phony electoral ballots for presentation to Congress represents violations of the forgery statutes in the first degree.

As with his other three indictments, a conviction on these charges would threaten Trump with jail terms which practically would amount to life sentences. Trump's best hope of evading that fate is political – capture of the Presidency by himself or a fellow Republican committed to issuing a blanket pardon. However, the President cannot pardon state convictions and in Georgia state pardons are handled by a parole board and are not in the gift of the Governor. Thus, this RICO indictment must be of considerable concern to Trump and his eighteen companions in the dock. Most of the companions can be sure of ruinous legal bills and life long unemployability in positions of trust whatever the outcome.

For the public the trial seems to hold much less interest despite the best efforts of media organizations to create drama. The public seems content to regard Trump and companions as guilty as charged, and they only differ in their response. One part of the public would award Trump a gold medal for his efforts, while the other part would assemble a firing squad. The justice system painstakingly grinding along to its more intermediate conclusion is an ultimately unsatisfactory entertainment for both sides of the public, no matter how hard CNN and its confreres try. Indeed, the public has clearly indicated that the story of a doll is its preferred entertainment. For an ex-media personality like Trump that may be the unkindest cut of all.

Like the Russians, the Republicans are attempting to defend a weak position by creating a diversionary attack. In this case the diversionary attack is on the President's son Hunter Biden for coat tailing off his father's position and trying to promote himself as a maybe influence peddler. The Republicans are meeting with about the same level of success as the Russians. Their difficulty is the more they make the son look like a crumb the more the public sympathizes with the father. The Republicans would be best advised to get back to talking about the municipal crime wave which actually concerns the public quite a bit. But they are finding that difficult to do while serving under a standard bearer facing four criminal indictments totaling 91 separate charges.

The first Republican presidential debate took place. Trump chose not to dignify it with his presence. The event mainly

exhibited the Republican activists in noisy revolt against the party's senior leadership represented by the former Vice President and the current or former governors of New Jersey, South Carolina, Florida, Arkansas and North Dakota. Nikki Halley (former governor of South Carolina) earned the support of the press by pointing out that Trump is the most hated politician in America and the red states are the biggest welfare queens. The Republican rank-and-file made clear they want Trump even if he is a felon. The leadership was probably more aware of the peril of embracing Trump when RICO charges are flying around, but they were unable to educate their party.

The Supreme Court's ethical quagmire deepened as it became clear that Justice Thomas's eyebrow raising coziness with wealthy political players was a pattern of behavior and not a special circumstance as originally represented. It would be good for the Court if Thomas were to find his advanced age (75) should call for his retirement before the next term commences in October. However today's partisan climate is unlikely to permit so elegant a resolution.

Economic news is – we are happy to report – pretty dull by comparison. America's number three credit rating agency created one days worth of publicity for itself by dropping the government's credit rating from AAA to AA+. The number one agency created more of a stir by downgrading the ratings of nine top tier banks to reflect declining profitability in core business lines. JP Morgan is reported to be shopping certain jumbo commercial real estate loans in an effort to trim portfolio exposure to a troubled sector. So continuing indicia of distress but no real news in the banking sector. The economy as a whole remains strong and reasonably balanced. Hiring continues but more slowly than expansion of the workforce, so unemployment ticked up from 3.5% to 3.8%. GDP revisions revealed the second quarter's strong performance to have been modestly overstated. The interest rate sensitive sector continues decelerating and inflation is moderating to the Federal Reserve's target range. At their annual meeting in Jackson Hole Wyoming central bankers struck their expected poses and uttered their expected lines. Their tone was slightly less strident than the recent past, which probably indicates their sense of having incrementally

improved their credibility and thus feeling less need to insist. An economic “soft landing” is now the consensus economic view, rather than “a credit crunch and abrupt recession.” We have been favoring the soft landing for about six months, but we caution that further bad credit news is likely in the current environment and may trigger temporary consternation.



AI

In our efforts to better understand the prospects for this technology we have been conducting table top experiments. A key issue for AI is to map between the world of language to the worlds of ideas – an issue known in technical terms as semantic understanding. In our table top experiments we had some success in mapping from natural language to a stock of predefined ideas using a Large Language Model. The LLM code exhibited better characteristics in out of sample tests than the previous generation of grammar analyzers would have been capable of. We are able to sketch out an R&D path which might lead to a rudimentary general artificial intelligence in perhaps a five year time frame. But we think near term commercially significant AI developments will remain focused on achieving results in narrow domains.

One insight we feel we have had from our AI research is that it changes the definition of a minimally viable software product. The minimally viable product is a term from the world of VC backed product development. It describes the easiest to build (most minimal) new product which is still capable of gaining traction in the marketplace. In other words, it is the point of first entry for a technology seeking to break through to commercialization. Existing software products mainly deliver functionality. An MVP is the product supplying the core set of necessary functionalities for an application domain.

However, an AI is not about supplying functionalities. Instead it is about replacing human intelligence in some role. To be an acceptable replacement an AI needs either to exceed human mental functioning or to supply equal functioning with either greater reliability, faster throughput or greater tolerance for adverse conditions. But outside the specialized applications in which AI can win on a performance basis, the AI needs to be smarter than the average human in the role. The IQ scale, despite its multiple limitations and idiosyncrasies, provides a useful ladder in this regard. The scale is calibrated to locate the average human at an IQ of 100. College graduates are found to have average IQs of 114 and professional school graduates average 120. A MVP AI probably needs an in task IQ of 120 to displace the human college graduate and an in task IQ of 125 to displace the human professional. This is not an impossible performance standard by any means. Computers have captured the world chess championship despite strong grandmasters having IQs of 160. But it is a different definition of a MVP. In many cases it will make the effort to create a MVP harder than with a traditional functionality based software product. Or to put it in more colloquial terms – no one is hiring a dunce of a computer. With a higher initial R&D commitment required, we think AI product development is likely to remain centered in the largest technology companies which are able to fund long term R&D projects.

One application of AI is in creating a chauffeur – a project known as the driverless vehicle.

Driverless vehicles have been operating for decades on closed circuits such as airport shuttle trains. However navigating city streets is a much tougher challenge for this technology. San Francisco has been serving as a somewhat grumpy test bed for such vehicles. Waymo – a subsidiary of Alphabet – has been running autonomous cars on the street since 2009, first with safety drivers in place and more recently in full automated mode. It is a challenging test bed. The city is more hilly than famously hill bound Rome. The streets are congested. And the city fathers – if such an antique term may be permitted – have laid out such a maze of one way streets that a single wrong turn can send the driver on a ten minute pretzel of a route to recover from the error. Despite these

challenges, the regulators recently allowed Waymo and Cruise to begin offering taxi services. The two companies are subsidiaries of Alphabet and General Motors respectively. Thus this R&D program has experienced a 14 year journey from first test to first revenue. Things are still not trouble free. Every mishap of driverless vehicles occasions comic press coverage not granted to similarly foolish human drivers. For instance, it was recently reported that a driverless vehicle had mired itself in wet concrete. With human egos delighted to poke fun at every AI blunder, we are reasonably confident AI will need to exceed human functioning by a clear margin to gain general acceptance.



The Global Economy

China's slowdown is having wide ranging effects. The emerging market countries are experiencing less demand for their commodities. In the developed world, both Australia and Germany feel the effects of China's slow down. Japan, by contrast, is more a rival than a partner of China. It has been comparatively strong. In Taiwan the pro-China KMT party is faltering in the run up to the national presidential election. Taiwan appears resilient in the face of mounting Chinese coercion. China's best lever over Taiwan is the terms of access to the mainland economy and with the slowdown comes diminished effectiveness of that lever. China falls back on military threat to counterbalance its waning economic influence. But threats also stiffen the resolve of Taiwan's majority population to resist conquest by the mainland. They have bitter memories of the civil conflict unleashed on the island by the 1948 flight of the KMT government to Taipei and the example of Hong Kong leaves them with few illusions of what they could expect from CCP rule.



The Markets

Markets sold off mid month on profit taking but had mostly recovered by month end. As a result most asset classes were little changed for the month. It remains to be seen if markets range trade about here for an extended period or resume a rising trend. Currently relative strength lies with Growth equity over Value equity as the market continues to respond to the enthusiasm for AI.

Table 1: Recent Market Performance

Category	Asset Class	6 month trend	3 month return	1 month return
Equity	US Large Cap	rising	7.58%	0.04%
	US Large Cap Growth	rising	8.57%	1.25%
	US Large Cap Value	rising	7.02%	-1.41%
	Growth – Value	growth leading value	1.56%	2.65%
	US Mid/Small Cap	rising	8.43%	-2.40%
	Intl Developed	range trading	1.22%	-0.87%
	Intl Emerging	range trading	2.57%	-3.12%
	Fixed Income	3-7 Year Treasury	range trading	-1.73%
7-10 Year Treasury		range trading	-3.32%	0.05%
TIPS		range trading	-2.06%	-0.04%
Muni		range trading	-0.86%	-0.36%
Investment Grade		range trading	-1.80%	0.27%
Medium Grade		range trading	1.58%	1.11%
Preferred		range trading	0.95%	0.03%
Commodity	REIT	range trading	2.77%	-2.94%
	Euro	range trading	0.61%	-1.35%
	Gold	range trading	-0.33%	-0.20%
	Oil	range trading	18.28%	8.14%



Advice

We recommend investors to formulate a strategic plan and stick to it except in the most unusual circumstances. Trying to time tactical market moves is a dicey game best left to specialists and seldom rewarding on a risk adjusted basis – especially for taxable investors.



About Us

Lloyd Tevis Investments LLC is a registered investment advisor offering its services over the internet to US individual investors and their families. Our Precision investing™ service provides clients with highly personalized investment solutions tuned to the client's specific circumstances and objectives. We believe the strategic asset allocation decision is the key decision faced by our investors. Accordingly, our monthly commentary focuses on matters which can shape the longer term performance of asset classes. We do not time market swings or pick individual stocks. Discussion at this level of detail is made for the light which it throws on relative valuations and such discussion should not be read as an investment recommendation. Indeed, we our investment focus is on maximizing diversification, careful risk budgeting and maximizing implementation efficiency. These are the proven builders of long term investment success.

In evaluating political and social developments our perspective is that of long term investors. We believe the investor's interest is best served by a stable environment in which change occurs incrementally as broadly supported policies rather than by an environment of abrupt changes

and frequent U-turns driven by transient partisan advantages. Finally, our assessments should always be read as what we consider likely to occur and not as expressions of what we would like to see come about. To learn more about our firm visit us at lloydtevis.com.

Cover Photo

We show two robo-taxis. The entry from Waymo is on the left and the entry from Cruise on the right. The cars are bristling with sensors – LIDAR, cameras and millimeter length radar. LIDAR is similar to radar but uses laser light pulses rather than radio pulses to query the environment and measure the distance to objects. This sensory data is processed by onboard computers which send control messages to the car's standard equipment. The extra equipment required to make the car self driving about doubles the cost of the car. By comparison, the average pay of a limousine driver in San Francisco is about \$25 per hour or nominally \$50,000 per year. Thus the self driving equipment cost equals about one year's pay for a driver. Assuming a five year life to the car, the cost saving over that period is about \$200,000 per car. The number of taxi cabs in the United States is not well documented but is probably on the order of 100,000. Converting all such cars to self-driving would produce annual cost savings of about \$4 billion – hardly a great bonanza. The real future for this technology lies in improving the functioning and reducing the cost until every car can be equipped with it as a standard feature. At that point highway congestion would potentially find some relief since coordinated motion of such vehicles should allow greater carrying capacity on roads.