The Secrets of Economic Indicators
A Look at the Risks and Opportunities Ahead
ASSUMPTION 1: Russia - Ukraine War: What is the end game?

Scenario 1. Probability: 40%
Vladimir Putin reconsiders war strategy in Ukraine; Russia’s economy is crippled and its military casualties mount. Putin agrees to a cease fire. Serious talks begin to end conflict. Ukraine adopts a policy of international neutrality and negotiates Russia’s role in Donbass region & Crimea, and Ukraine’s economic ties to the West.
War duration: 1H 2022

Scenario 2. Probability: 30%  Regime change. Putin is forced out of office. New leader emerges to end the war. Russian soldiers retreat. Ukraine maintains its independence. Memorandum of understanding on future relationship between Ukraine and Russia.
War duration: IH 2022

Scenario 3. Probability: 20%
Russia’s military setbacks hardens Putin’s resolve to achieve FULL military victory over Ukraine --- at all costs! Massive damage, deaths and injuries. Installs puppet regime in Kyiv.
War duration: Lasts into 2H 2022

Scenario 4. Probability: 10%  Putin doesn’t stop with Ukraine. He tests Article 5 of the NATO treaty and moves next against one or all the Baltic states (Estonia, Latvia, Lithuania). Putin’s bet: US would never risk nuclear war just to protect these NATO countries.
War duration: Risks WW III!
ASSUMPTION 2: Threat of Covid-19 virus recedes

• **GOOD NEWS** - Impact of Covid is less and less with each wave.
  - Most Americans are inoculated and crave return to normal life.

Vaccination projections of US “consumer population” (12 years & older)

• By end of Q1 2022, 75% expected to be **fully vaccinated**.
• By end of Q1 2022, 47% will have also received **boosters**.

• **BUT MUST REMAIN VIGILANT** – We’re not in a “post-Covid” era yet!
  --- Too many countries have failed to adequately vaccinate their population.
  --- More variants likely in 2022 and 2023. (e.g., BA.2 subvariant of Omicron)
  --- Cannot dismiss the spread of a new lethal Covid virus.

--- % of entire population

**NOT VACCINATED AT ALL!**
(as of March 13, 2022)

<table>
<thead>
<tr>
<th>Country</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haiti</td>
<td>98%</td>
</tr>
<tr>
<td>Madagascar</td>
<td>96%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>94%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>91%</td>
</tr>
<tr>
<td>Sudan</td>
<td>89%</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>88%</td>
</tr>
<tr>
<td>Syria</td>
<td>88%</td>
</tr>
<tr>
<td>Algeria</td>
<td>83%</td>
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<tr>
<td>Ethiopia</td>
<td>80%</td>
</tr>
<tr>
<td>Kenya</td>
<td>79%</td>
</tr>
<tr>
<td>Ghana</td>
<td>72%</td>
</tr>
<tr>
<td>S. Africa</td>
<td>66%</td>
</tr>
<tr>
<td>Egypt</td>
<td>60%</td>
</tr>
<tr>
<td>Russia</td>
<td>46%</td>
</tr>
<tr>
<td>US</td>
<td>23%</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td>36%</td>
</tr>
</tbody>
</table>

Source: Ourworldindata.org (University of Oxford)
**ASSUMPTION 3:** Federal Reserve to lift rates 5 times (25 bps each) in 2022 + 3 more in 2023. Less than their own projections. 10-yr. Treasury yield gently slopes higher this year and 2023.
CONCERNS:
--- Consumer sentiment in Jan. & Feb lowest in more than a decade! (Surging inflation, rising interest rates, geopolitical conflicts.)
--- Latest data: • Retail sales in Feb. (ex-gasoline) FELL (-0.2%)!
  • Wages not keeping pace with inflation. Avg. hourly pay for all employees up 5.1% (Feb. YOY)
  • Inflation (CPI - Feb (YOY) leaped by 7.9%, fastest in 40 years! And still climbing!
--- Americans now digging into savings. Savings rate drops to 6.4% in Jan. 2022 vs. 10.5% six months earlier!

POSITIVE DEVELOPMENTS:
• With increased vaccinations, more Americans want to travel, eat out and shop. Biggest risk? Gasoline prices above $4.75 gal.
• Job market remains exceptionally strong! Positions to fill (11.3 million) far exceeds those unemployed and looking (6.3 million).
• Inflation to peak by summer 2022 (based on assumption the war in Europe ends by 1H)
  Other reasons: --- Economic growth will moderate this year.
  --- Consumers increasingly resist paying higher prices. Companies find it more difficult to pass on costs.

Sources: BLS; BEA; Univ. of Michigan; The Economic Outlook Group (forecasts)
US labor crunch has been in the works long before Covid-19!
Reasons: Falling birth rates, jump in retirements and restrictions on immigration into the US

- Annual Real GDP Growth Avg. (2010 - 2019) = 2.3%
- BUT Annual Growth in Labor Force Avg. = 0.6%
Help! “Can’t find qualified workers!”

Pandemic will have long lasting effects on the labor market

Pandemic has aggravated the shortage of workers:

- Friction in labor market: Mismatch in skills.
- Jump in retirements fueled by Covid.
- Caregivers: Young children remain unvaccinated
- Americans seek different career paths: take online courses / new skills
- Record high quit rates in 2021
- Surge in new unincorporated business formations

Sources: Bureau of Labor Statistics; Dallas Federal Reserve report, May 27, 2021 (One in three workers fail to return);
Biggest DROP in unemployment rates from April 2020 to Feb. 2022

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Decrease</th>
<th>Number of Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>College degree or higher</td>
<td>-6.2%</td>
<td>1.347 Million</td>
</tr>
<tr>
<td>Some college (AA degree)</td>
<td>-13.1%</td>
<td>1.331</td>
</tr>
<tr>
<td>High School graduate (No college)</td>
<td>-11.5%</td>
<td>1.636</td>
</tr>
<tr>
<td>Less than High School diploma</td>
<td>-14.8%</td>
<td>0.388</td>
</tr>
</tbody>
</table>

Employers are also actively interviewing those without HS diplomas!
Screening: Do they have the ambition, aptitude, responsibility and willingness to learn new skills?

Source: Bureau of Labor Statistics (as of Feb. 2022)
DIFFICULTY FINDING RESTAURANT WORKERS?
Place iPad-like devices at every table.
Meals can be orders from one’s seat.
Menus can also be altered as needed.

HOME CONSTRUCTION USING
3-D PRINTING TECHNOLOGY.
Takes about 7-10 days to construct at a
cost 30% to 50% cheaper than standard
construction methods.

HOW CAN TRUCKING FIRMS SAVE ON FUEL,
LABOR COSTS AND REDUCE EMISSIONS?
Wireless communications allows for “platooning,”
with one driver controlling multiple trucks or trailers

FEWER RETAIL WORKERS NEEDED.
Want some fancy shoes fast?
Purchase the proprietary codes and your
3-D printer at home will
manufacture a customized pair.

Sources (top-to-bottom): OTG; SQ4D; PSA Ministry of Transport; MakerBot,
Construction Employment: Job openings and hires
Contractors are still having difficulty filling vacant positions!

Source: Federal Reserve via Bureau of Labor Statistics
Construction pay is rising to attract new workers. More increases are likely which could hurt margins.

Percent change in average hourly earnings for employees in the building industry

Average hourly increase in pay (construction): Feb. 2022 / Feb. 2021
- Production and nonsupervisory: 6.03%
- All employees: 5.08%

Source: Federal Reserve via Bureau of Labor Statistics
Top 20 states in nonresidential construction starts 2021 vs. 2020 (in dollars)

<table>
<thead>
<tr>
<th>State</th>
<th>Jan-Dec 2021 (in dollars)</th>
<th>% Change vs Jan-Dec 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Texas</td>
<td>$46,906,486,503</td>
<td>-9.9%</td>
</tr>
<tr>
<td>2 California</td>
<td>$39,564,032,616</td>
<td>-1.1%</td>
</tr>
<tr>
<td>3 Florida</td>
<td>$24,015,609,974</td>
<td>-0.5%</td>
</tr>
<tr>
<td>4 New York</td>
<td>$21,474,698,600</td>
<td>9.4%</td>
</tr>
<tr>
<td>5 Arizona</td>
<td>$16,184,859,031</td>
<td>98.4%</td>
</tr>
<tr>
<td>6 North Carolina</td>
<td>$14,388,870,348</td>
<td>33.8%</td>
</tr>
<tr>
<td>7 Ohio</td>
<td>$14,146,647,353</td>
<td>-5.0%</td>
</tr>
<tr>
<td>8 Pennsylvania</td>
<td>$13,233,782,933</td>
<td>14.4%</td>
</tr>
<tr>
<td>9 Illinois</td>
<td>$12,621,626,810</td>
<td>-16.0%</td>
</tr>
<tr>
<td>10 Massachusetts</td>
<td>$11,939,559,111</td>
<td>23.3%</td>
</tr>
<tr>
<td>11 Georgia</td>
<td>$10,922,906,086</td>
<td>-14.2%</td>
</tr>
<tr>
<td>12 Virginia</td>
<td>$9,614,946,223</td>
<td>-10.1%</td>
</tr>
<tr>
<td>13 Minnesota</td>
<td>$9,592,629,924</td>
<td>8.2%</td>
</tr>
<tr>
<td>14 Tennessee</td>
<td>$9,169,030,085</td>
<td>10.7%</td>
</tr>
<tr>
<td>15 Louisiana</td>
<td>$8,803,042,880</td>
<td>86.9%</td>
</tr>
<tr>
<td>16 Michigan</td>
<td>$8,586,169,130</td>
<td>12.3%</td>
</tr>
<tr>
<td>17 Missouri</td>
<td>$8,281,490,776</td>
<td>-13.1%</td>
</tr>
<tr>
<td>18 Indiana</td>
<td>$8,129,056,778</td>
<td>-2.5%</td>
</tr>
<tr>
<td>19 Washington</td>
<td>$7,628,931,359</td>
<td>-41.4%</td>
</tr>
<tr>
<td>20 Colorado</td>
<td>$7,137,589,856</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Figures are comprised of non-res building & engineering (residential is omitted).

Who gained & lost construction jobs over last 23 months?

- 29 states saw construction jobs exceed Feb. 2020 level.

States that LOST most construction jobs

Biggest Job losses:
- NY - $32,000 (-7.8%)
- TX - $29,400 (-3.8%)
- CA - $28,600 (-3.1%)

Biggest percentage loss:
- NY - 7.8% (-32,000)
- ND - 7.8% (-2,200)
- OK - 6.7% (-5,500)

States that ADDED most construction jobs

Biggest Job gains:
- UT +$10,400 (+9.1%)
- IN +$8,600 (+5.8%)
- MO +$7,100 (+5.5%)

Biggest percentage increase:
- MT +11.4% (3,500)
- ID +10.0% (5,300)
- UT +9.1% (10,400)

Sources: Census (historical data); Table - ConstructConnect; Confidence Survey - Associated General Contractors (AGC) & Sage Construction
Construction industry struggles with labor shortages, costly material and equipment rental. Non-residential spending to slip in 2022, but recovers in 2023 - 2024 as commercial & infrastructure investments picks up. Residential construction to accelerate as Americans continue their suburban shift.

Sources: Census (historical data); Economic Outlook Group (forecasts)
Cost of building material climbs. Latest figures do not even reflect Russia-Ukraine war!

**Reasons:** Supply chain bottlenecks, tariffs, higher petroleum prices, plant shutdowns.

**Result:** Greatly complicates pricing bids on construction projects --- and length of time they are valid.

### Cost of selected building material (Feb. 2022) % change over past 12 months

- **Plastic pipes:** 60.2%
- **Aluminum sheets & strips:** 37.7%
- **Copper & brass mill shapes:** 24.4%
- **Lumber/Plywood:** 22.2%
- **Gypsum products:** 20.7%

Source: Bureau of Labor Statistics
Contractor fees on NONRESIDENTIAL projects climbed sharply over the year! Primary reasons: Higher labor costs, building material, equipment rental and leasing.

- Concrete contractors 18.4%
- Roofing contractors 13.5%
- Electrical contractors 12.1%
- Plumbing heating/AC contractors 9.6%

Source: Federal Reserve via Bureau of Labor Statistics
Housing starts in 2021 was strongest in 15 years. Growth to continue 2022-2024 but at a slower pace.

Builder confidence fell this March --- 4th monthly decline: scarcity of affordable land, higher building costs, shortage of labor.

Total housing starts and permits: Annual total, in thousands

<table>
<thead>
<tr>
<th>Year</th>
<th>Housing Starts: % Growth</th>
<th>Housing Permits: % Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>+6.9% (1.38 Mill)</td>
<td>+4.3% (1.47 Mill)</td>
</tr>
<tr>
<td>2021</td>
<td>+15.7% (1.59 Mill)</td>
<td>+0.7% (1.72 Mill)</td>
</tr>
<tr>
<td>(f) 2022</td>
<td>+1.3% (1.61 Mill)</td>
<td>(f) 2022</td>
</tr>
<tr>
<td>(f) 2023</td>
<td>+1.2% (1.63 Mill)</td>
<td>(f) 2023</td>
</tr>
<tr>
<td>(f) 2024</td>
<td>+0.6% (1.64 Mill)</td>
<td>(f) 2024</td>
</tr>
</tbody>
</table>

Sources: US Department of Commerce, The Economic Outlook Group
New Privately-Owned Housing Units Authorized -- but Not Started: A record high level!

Feb. 2022: 273,000 homes not yet started, 26% above Feb. 2021

Backlog of authorized new homes waiting to be built
--- shortage of construction material
--- lack of workers
--- fear rising mortgage rates may cool demand

Source: Federal Reserve via Census Bureau
Leading Indicator of Remodeling Activity – Fourth Quarter 2021

Homeowner Improvements & Repairs
Four-Quarter Moving Totals
Billions

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Historical Estimates</th>
<th>LIRA Projections</th>
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<tbody>
<tr>
<td>3</td>
<td>327</td>
<td>390</td>
</tr>
<tr>
<td>4</td>
<td>327</td>
<td>404</td>
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<tr>
<td>2020-1</td>
<td>335</td>
<td>427</td>
</tr>
<tr>
<td>2</td>
<td>332</td>
<td>432</td>
</tr>
<tr>
<td>3</td>
<td>332</td>
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</tr>
<tr>
<td>4</td>
<td>336</td>
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<tr>
<td>2021-1</td>
<td>350</td>
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</tr>
<tr>
<td>2</td>
<td>351</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>357</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>368</td>
<td></td>
</tr>
</tbody>
</table>

Four-Quarter Moving Rate of Change

<table>
<thead>
<tr>
<th>Year</th>
<th>2022-1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>11.3%</td>
<td>15.2%</td>
<td>19.7%</td>
<td>17.3%</td>
</tr>
</tbody>
</table>

Source: Harvard University - Joint Center for Housing Studies

Top 10 markets expected to lead in annual increases in home improvement for 2022

1. Tucson, AZ 23.0%
2. Riverside-San Bernardino, CA 21.9%
3. Phoenix-Mesa-Scottsdale, AZ 20.3%
4. Austin-Round Rock, TX 19.2%
5. San Antonio-New Braunfels, TX 19.1%
6. Las Vegas-Henderson-Paradise, NV 17.5%
7. Sacramento-Roseville-Arden-Arcade, CA 17.3%
8. Virginia Beach-Norfolk-Newport News, VA-NC 17.2%
9. Atlanta-Sandy Springs-Roswell, GA 16.8%
10. San Diego-Carlsbad, CA 16.6%
Forecast: Real GDP growth: 2022 - 2024

Impact of $1.2 trillion physical infrastructure bill:
Projected to add: 0.15 percentage point to GDP growth in 2022
0.30 percentage point in 2023
0.40 percentage point in 2024

Sources: Bureau of Economic Analysis (historical); The Economic Outlook Group (GDP forecasts), Federal Reserve
A lengthy Russian - Ukrainian War that lasts into 2H 2022
Such a conflict would lead to stagflation in US. Odds of US recession in 2022: 45%

Annual Real GDP growth (%)

Sources: Bureau of Economic Analysis (historical); The Economic Outlook Group (GDP forecasts), Federal Reserve
CPI inflation likely to peak in 2Q 2022 and then gradually decline

Unemployment rate to fall further in 2002 - 2024 as pace of hiring exceeds labor force growth

Source: Historical data - BLS; Forecasts by The Economic Outlook Group
CPI inflation jumps to double-digits should conflict in Europe last into 2H of 2022

Unemployment rate moves back up as a protracted war in Europe hurts global economic growth

Source: Historical data - BLS; Forecasts by The Economic Outlook Group
Oil prices in 1H 2022 will range $95 - $120 bbl., and begin to slide 2H and 2023

2022: Geopolitical clashes, OPEC’s failure to meet 400,000 bbl quota, world rushes to build up inventories for next winter.
2023: International tensions subside, lowers risk premium, more supplies from Iran, shale producers increase output.

Sources: US Energy Information Administration, The Economic Outlook Group
The Dashboard: 12 Leading Indicators Signal Modest US Growth 2022 - 2023

**Consumer spending patterns:**
- Purchases of durable goods, adjusted for price changes (Census, BEA)
- Personal savings rate (BEA)
- Confidence levels; 3-month moving average (UofM)
- New single family home sales / Pending Homes sales (Census; NAR)

**Employment data:**
- Average weekly hours worked; manufacturing (BLS)
- New applications for unemployment benefits (BLS)
- Employment in day care centers (BLS)
- Job openings in the private sector (BLS)

**Business:**
- ISM manufacturing – new orders (ISM)
- Business Inventories - Manuf, Wholesale, Retail (CB)
- Ratio of housing permits to housing starts (CB)

**Capital Markets:**
- Cost of capital to business (interest rates and equity values)

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**Plus…Non-standard hi-frequency indicators**

**Restaurant bookings:**
[Opentable.com/state-of-industry]

**Hotel Occupancy:**

**TSA - Airport traveler traffic:**
[TSA.gov/coronavirus/passenger-throughput]
The Next Exogenous Shock?
Multiple hi-probability threats loom

- Cyber warfare: Threat has shifted from espionage, IP theft & ransomware ---> to intentional sabotage!
- A new lethal Covid-19 variant suddenly emerges; Will current vaccine’s effectiveness hold up?
- US - China clash militarily in South China Sea and across Taiwan Strait.
- Iran is “within weeks” of producing enough fissile material for nuclear weapon. Israel won’t sit by.
- To regain attention, N. Korea tests ICBM over Pacific Ocean; Boasts it can now reach US mainland. US response?

“High-probability” defined as having at least 1 in 3 chance of occurring based on our threat assessment model
A. Capital expenditures: Invest in being resilient. Diversify supply chain sources. Goal is to be price competitive.
   1. Boost spending to increase efficiency & productivity. Protect your market share: Once lost, difficult to regain.
   2. Just-in time-inventory is no longer a workable strategy.
   3. Consider vertical integration. Acquire (or partly own) your suppliers to secure timely inventory.

B. Conduct rigorous “stress tests” with your company to identify its biggest operational vulnerabilities.
   Introduce adverse “what if” scenarios (e.g., systemic power failure, supply chain disruptions, loss of access to credit lines, cyberattacks, another lethal pandemic).

C. Prepare contingency plans for the next exogenous shock --- and be ready to implement them!
   Goal is to remain operational. Invest on being agile, flexible and adaptive.
   Clients value reliability and quality. Shareholders reward firms that demonstrate resilience!

The last two years have been historic. The world order has changed! Adjusting to a new economic & geopolitical reality
Quit rate among construction workers has recently declined as wages increase.
Fragilities in the global supply chain system now fully exposed.

--- Business leaders are tiring of endless trade conflicts, geopolitical clashes and costly ocean cargo shipping.

--- Shifting production & supply chains from China to other Asian countries may also be problematic; Many lack the skills and needed infrastructure (roads, rails and ports).

--- “Just-in-time inventory management” that relies on Asia is now a flawed strategy.

Top-to-bottom review of supply chains underway.

--- Companies demand greater simplicity, dependability, better control of their supply chain networks

--- Technology & gov’t incentives are changing the economic calculus of onshoring and near-shoring

   • More investments in AI, robotics, 3D printing, cloud computing, IoT, Vr/Ar, drones
   • White House & Congress underwrite efforts to domicile essential industries for economic & national security reasons
      — full range of semiconductor chips, battery technology, rare earth minerals, medical supplies
   • COMPETES Act (House bill) -- versus -- US Innovation & Competition Act (Senate bill)
      — $52 billion in subsidies helps, but is not nearly enough
      — Better balance needed between legacy and high-end chips
      — FABS operating costs must come down to be price competitive (taxes, regulatory compliance, labor costs)
Changes in work environment:

--> Permanence to remote work: Many US firms found it seamless and successful;
   • Reason: Technology! Also reduces health risks, reduces office space & rent.
   • Imagine if Covid-19 struck in 1980. No WiFi, laptops or cell phones at the time.

--> Expect about 30% of employees to work remotely in a permanent basis.¹

--> Apartment buildings set aside a floor with shared work spaces, private offices and conference rooms.
   • Creates mental separation and avoids home distractions (and serves as a source of new revenue to the building)

Shifts in human behavior: We are headed toward a digital currency.

--> Consumers dislike transacting with cash paper and coins.

--> We are headed toward a digital currency and electronic payment systems. The Federal Reserve is testing a “Fedcoin.”
   • It will fundamentally change the financial plumbing of the global economy.

--> The pandemic has greatly accelerated eCommerce’s penetration in total retail sales.

The Energy Revolution: Transition away from fossil fuels will take decades!

--> While a record amount of capital flowing into renewables, dependence on fossil fuel will last for years and complicate efforts to reduce greenhouse gasses (GHG).
   • CO₂ level now the highest in 4 million years!²
   • Rising sea levels: Greenland’s massive body of ice now losing 1 million tons of ice per minute!³

--> Experts foresee an increase in severe floods, droughts, wild fires, hurricanes and medical ailments.

¹ Enterprise Technology Research Survey (October 22, 2020); ² NOAA study (June 7, 2021); ³ Journal of Communications Earth & Environment (August 20, 2020)
US existing home sales in 2021 was best in 15 years! 2022 should top it.
Fear of rising mortgage rates and strong job market will accelerate home buying this year.
Sales to slow 2023. High borrowing costs, scarce inventory & steeper home prices → reduces affordability.

Sources: National Association of Realtors, The Economic Outlook Group
Mall owners are revamping their business models

Being resilient in the retail real estate sector

1. Buy out tenants:
   Simon Property Group, Brookfield Asset Management, Authentic Brands now own some bankrupt tenants.

2. Who else is moving into malls? Service-oriented businesses.
   Amazon distribution centers, walk-in med clinics, fitness centers, food/restaurants, entertainment venues, even residential units.
Decrepit infrastructure holds back economic growth
$1.2 trillion infrastructure law is a decent start.
But competition will be fierce over labor, building material and equipment

EXAMPLES:
• Philadelphia still relies on underground pipes installed before the Civil War.
• 84,000 bridges considered functionally obsolete.
• 58,000 bridges deemed “structurally deficient,” yet still carry 180 million cars a day!

• There are more than 685 water main breaks a day on average in the US; 250,000 a year.
• Leakages and spills waste an average of 5.8 billion gallons of water each day!

Sources: American Society of Civil Engineers, American Water Works Association, Center for Neighborhood Technology
Inflation:

- Oil (both Brent and WTI) to hover between $110 to $140 bbl
- US retail gasoline prices (national avg.): $4.50 to $6.25 gallon
- Europe nat. gas prices could climb to $60 per million BTU (equiv. to $300 bbl of oil)
  --- Europe relies on Russia for 35% of its natural gas needs, EU’s largest single source.
- Global food inflation leaps higher: All shipments below are thru Black Sea.
  --- Ukraine – world’s 3rd largest exporter of corn and 4th largest exporter of wheat.
  --- Russia – world’s largest exporter of wheat.

Cyber Attacks: Sporadic worldwide disruptions of supply chains, power generations, internet access, financial transactions, water distribution, gas pipelines.

Financial markets: Global capital rush into safe haven assets: US treasury yields fall; US dollar, Swiss franc and Japanese yen to appreciate sharply. Gold climbs; Cyber currencies to fall.

Recession risks in 2022:
- US: 45%
- Europe: 70%
- Japan: 60%

Outstanding bank loans made to Russia:
- France $24.2 billion
- Japan $9.6 billion
- Austria $17.4 billion
- Germany $8.8 billion
- US $16.0 billion

Sources: Projections made by the Economic Outlook Group; BIS for bank loans
The energy crisis shows how dependent countries remain on oil and natural gas. U.S. investments in renewables are increasing, but not enough to offset reliance on fossil fuels.
CRE sectors of weakness in 2022:
- Lodging
- Retail
- Office buildings

Sectors of strength:
- Manufacturing
- Data centers
- Warehouses
- Health care centers

<table>
<thead>
<tr>
<th>Forecast - Capital Outlays: (% annual change)</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresidential construction spending</td>
<td>-3.1%</td>
<td>-3.0%</td>
<td>+6.7%</td>
<td>+9.2%</td>
</tr>
<tr>
<td>Office</td>
<td>-6.2%</td>
<td>-5.9%</td>
<td>+2.8%</td>
<td>+5.5%</td>
</tr>
<tr>
<td>Commercial (retail and warehouses)</td>
<td>+4.1%</td>
<td>+10.6%</td>
<td>+4.5%</td>
<td>+4.0%</td>
</tr>
<tr>
<td>Lodging</td>
<td>-32.0%</td>
<td>-6.5%</td>
<td>+1.2%</td>
<td>+3.2%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>+8.5%</td>
<td>+3.8%</td>
<td>+5.6%</td>
<td>+3.9%</td>
</tr>
<tr>
<td>Sewer &amp; Water Supply</td>
<td>-3.1%</td>
<td>+7.5%</td>
<td>+8.3%</td>
<td>+6.9%</td>
</tr>
</tbody>
</table>

Sources: Table - Economic Outlook Group (forecasts)