

GLOBAL MOBILITY FUND

Fund FAQ - Q4 2022



TAMIM

WHY MOBILITY? WHY NOW?

\$7-10 Trillion Revolution: That's right, trillion with a "T." We believe this is going to be the biggest technological revolution of our lifetime... and very few are paying attention.

It's Happening Now: EV adoption is inflecting, and autonomous vehicles are already on the road today across the US. Google's Waymo division has over 600 self-driving cars (no safety drivers!) that have collectively driven over 20 million miles (32 million kilometres). In the Phoenix area, consumers

Every Industry Will Be Affected: We believe there will be massive winners and significant losers - given our structure, we plan to make money on both. On the winning side, think about semiconductors (digital and electric vehicle content), cloud software & infrastructure, and autonomous technologies. On the loser side, think about the industries that will disappear: car rental companies, and internal combustion.

Multiple Ways to Win: While the end state is already coming into view, there are multiple building block evolutions that we are actively seeking to capitalise on namely, Sharing/Connectivity, Electrification, and Autonomy.



1. WHAT WERE THE KEY OBSERVATIONS IN 2022?

In 2022, we progressed through phase 2 and a large chunk of phase 3 of the bear market (more details on bear market progression in Q&A #10). To summarise, phase 2, the broader duration sell-off (inflation shock), began in November 2021 and is characterized by a rapid increase in interest rates – in fact, this was the fastest rise in rates in history. This rapid rise disproportionately negatively impacted growth assets (i.e. longer duration, rate and terminal value sensitive) – with the “growth-heavy” Nasdaq down 31%, in that timeframe, and the liquidity and growth sensitive ARKK ETF down 80% from its peak in February 2021 to December 2022.

While phase 2 (duration sell off) primarily impacted the multiple paid for assets (i.e. interest rates up, multiples down), phase 3 (growth slowdown) is more focused on negative earnings revisions (i.e. the Earnings in the Price/Earnings ratio) as nominal and real growth decelerates. The Fed is now tightening into an economic slowdown to control inflation, which is hit multi-decade highs, and preserve the credibility of the US Dollar and Treasury system.

During this 3rd phase, we are seeing the market focus shifting toward recessionary concerns (as macro indicators decline). While inflation remains an issue in absolute terms (high at ~6-7%, as measured by the CPI), it has plateaued and begun to decelerate in rate of change terms (and should continue to over the coming ~6 months or so). During phase 3, as we have already started to see, quality growth type names should start to outperform economically sensitive names (commodities, cyclicals, etc.). Overall, we believe this transition should start to bode well for our strategy, which is focused on investing in the next-gen tech ecosystems (which tend to be longer duration, growth assets) and shorting the legacy businesses likely to go away (which tend to be value type assets). We lay out our more detailed macro views and the potential for phase 4 in Q&A #10.

2. WHAT WERE THE KEY CONTRIBUTORS / DETRACTORS OVER THE YEAR?

Overall, the Mobility Fund was down 29.7% net in 2023 versus the Nasdaq down 33.1% and the ARKK Innovation ETF (Mobility 'Proxy') down 80.0%. Key positive contributors during the year were primarily stocks we are negatively biased on and are (or were) short, such as Uber and Doordash, as well as some higher quality high dividend yielding stocks, such as Enterprise Products.

On the negative side, we still don't believe businesses like Uber (and Doordash, among others) have the ability to scale without automation, and the issues with their unsustainable business model have been exacerbated by rising interest rates (higher cost of capital) and labor costs.

On the positive side, we continue to look to add to durable growth names and key energy and transportation revolution enablers (more details below) on weakness – and many of these growth names appear to be ~bottoming as interest rates plateau and the valuation headwind abates. Key detractors during the year were primarily growth assets (duration / interest rate sensitive) that we were long via put sales and/or outright, such as Amazon (key automation adopter, and now autonomous player with Zoox acquisition) and Revel (EV Charging infrastructure), as well as some market hedges (SPY).

We believe this current phase of the market – growth slowdown – will start to favour secular growth names (many of which are down 50-90%+ from all-time highs) and disproportionately negatively impact economically sensitive names (many of which are secular losers). Overall, with liquidity coming out of the system, volatility is significantly higher today than it was over the last decade, and thus we are more actively managing the portfolio (via both options and outright equity) to attempt to capture unique opportunities that are presented.

3. WERE THERE ANY OTHER NOTABLE CHANGES TO THE PORTFOLIO OVER THE LAST 3 AND 12 MONTHS?

As we transition through phase 3 of the bear market, the primary change in the portfolio complexion has been and will be to add to secular growth (generally tech-focused and energy/transportation revolution enablers) longs via put sales and/or outright equity purchases and to scale up secularly declining, economically sensitive (generally cyclical / value) short positions. Interest rates appear to be in the process of topping, which is typical during this phase transition. Overall, we remain cautious to neutral on the overall market – but are increasingly excited about both our long and short universes. Many of the names in our long universe are down ~50-90%+ from their peak, providing very attractive entry points into the next decade’s winners. While the short universe, primarily composed of legacy businesses set to go away, has held up a lot better and dramatically outperformed the overall market. As growth slows and interest rates peak, we expect this dynamic is set to flip in our favour. See the 4Q22 Mobility webinar slides 15-16 for a list of some of our top longs and shorts over the next decade.

4. WERE THERE ANY MEANINGFUL CHANGES IN VALUATIONS ACROSS THE PORTFOLIO?

As noted above, the long side of the mobility universe has been decimated over the last year+. As a proxy for the long side of the universe, ARKK – an ETF focused on investing in next-gen innovation technology and mobility – is down 80% since February 2021 through December 2022. Many constituents within our universe are down even more. The majority of this value destruction has been concentrated in multiple compression – very typical of phase 2 (duration sell-off), as interest rates rise parabolically. On the flip side, many names within the short universe – generally shorter duration value names, less sensitive to interest rate rises – have held up well and outperformed the market and related benchmarks (SPX, QQQ, and ARKK). An example is the Energy sector, with the XLE up approximately 55%. Net net, as we progress through phase 3 (growth slowdown), we are beginning to see the dynamic flip – with secular growth names (many of which have already taken “pain”) beginning to outperform economically sensitive names (such as auto OEMs) that are likely to see significant negative earnings revisions.

Over the next several years, we believe stock-picking will be a lot more important than it was over the previous decade. As we noted above, we believe this period closely mirrors the Dotcom boom and bust (~1999-2002).

While everything Tech/Internet sold off in unison at first (e.g. Amazon was down over 95%), the key coming out was being able to discern the real companies (winners) from the frauds (losers). Winners like Amazon proceeded to go up ~600x over the following two decades and the Dotcom bust provided a rare buying opportunity. While losers like Pets.com went to zero. We expect to see the same thing today – expected winners like Tesla are likely to bottom between now and the next 6 months or so, while expected losers like Electric Last Mile Solutions have already started to file for bankruptcy. Overall, expected winners now have attractive risk/reward profiles – 10-20x+ higher, versus 20-30% lower – and although the coming quarters are likely to be bumpy, we are incredibly excited about the opportunity set ahead.



5. HOW HAS THE PORTFOLIO NAVIGATED RECESSIONARY RISK, HIGHER INFLATION, THE ABILITY TO PASS THROUGH COSTS, AND OTHER MATERIAL CONSTRAINTS (HIRING, ENERGY COST, SUPPLY CHAINS)?

While the last ~6-9 months have been disappointing from a performance perspective, we are highly confident in both our macro and micro views and processes, and believe the portfolio is and will be well-positioned to weather this storm and **capitalise on the rare opportunity** set coming out of it.

We believe we are entering phase 3 of the bear market (growth slowdown) and have and will continue to position the portfolio accordingly. In general, we look to invest in resilient and adaptable business models on the long side and are cognizant of how these stocks tend to perform in a downturn (i.e., look for pricing power, positive free cash flow, key secular revolution/capex enablers, etc.).

And we look to short the opposite – secularly declining companies not investing for the future, and with no pricing power or competitive advantage. We believe many of these secular losers (generally economically sensitive names) are set to lead the next leg lower this winter.

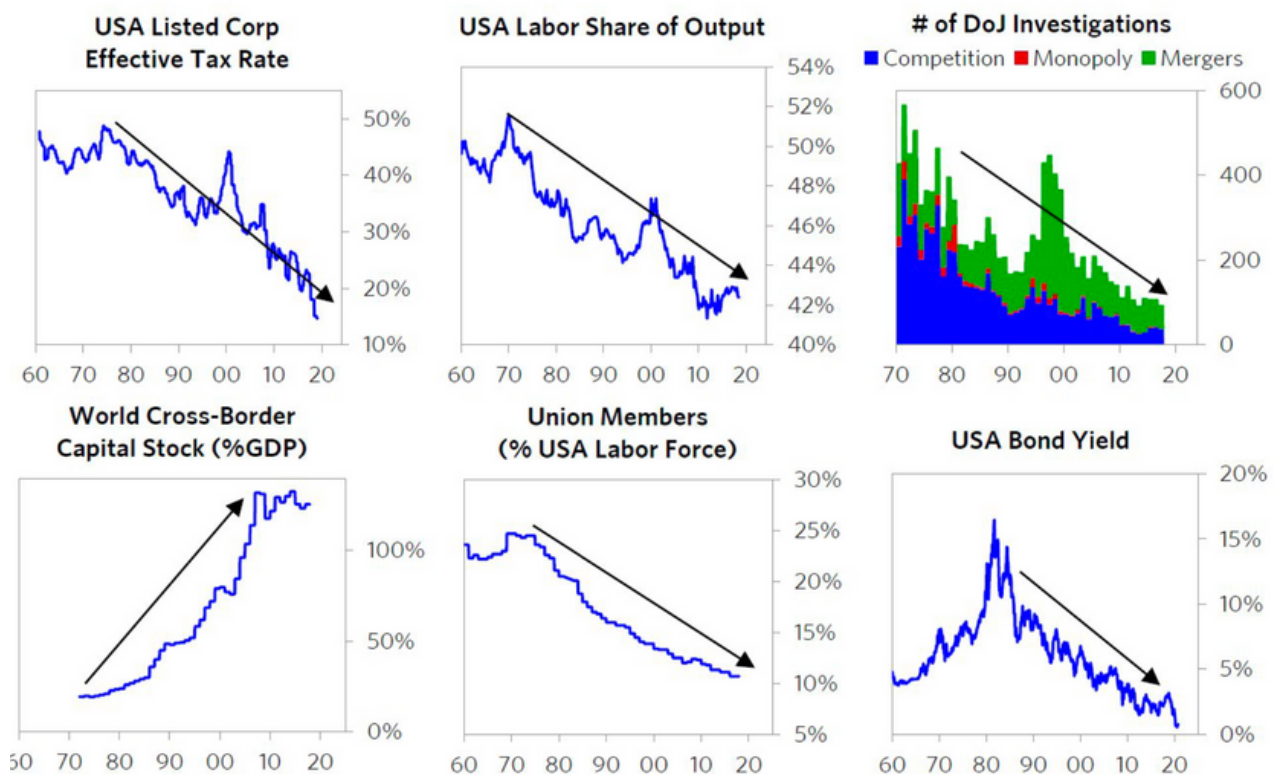
Overall, we're excited about the opportunities that this environment has and will present as:

- The trends that we're focused on we believe are all accelerating out of necessity
- Our conviction has dramatically increased
- The universe is now 76% cheaper (using ARKK since February 2021 as a proxy)
- The risk-reward is skewed highly positive

6. MACRO AND MOBILITY RECAP – HOW WE GOT HERE

Over approximately the past 24 months, we have seen an extremely compressed economic cycle - partially driven by an unprecedented fiscal response (essentially MMT) to the Covid crisis, which rocked an already fragile (though efficient) world economy and financial market.

Taking a further step back, we have seen a very clear trend over the past 40 years: corporate tax rates down, labour share of output down (capital up), regulation down, globalisation up, unions down, and interest rates down.



Source: asiancenturystocks.com | <https://mobile.twitter.com/fritz844/status/1389061193365483520>

These dominant trends and the overall economy and stock market were primarily ‘governed’ by Central Bank (Monetary) policy around the world, most notably the Fed. Having hit the zero bound in an over-levered system in 2020, monetary policy lost its relative potency (diminishing returns) – hence the need for a significant fiscal response. That fiscal response – which sent money directly into the real economy (on the demand side) – paired with the COVID (and now War) induced supply constraints have driven the significant inflation we are seeing today.

While we believe inflation on a rate-of-change (y/y) basis is in the process of peaking (though Ukraine/Russia has lengthened that process) and decelerating, we do expect structurally higher baseline inflation (relative to the last decade) over the next several years. Despite the deflationary impacts of debt, demographics, and technology, the 'newfound' power of fiscal paired with the reversal of several trends above changes the inflation calculus.

We are now in an environment where things *need* to change. We believe we are in the midst of a 4th Turning and near the end of a long-term debt cycle. We are unfortunately on the likely path to increased global conflict - with the non-kinetic portion well underway with US/China sanctions (e.g., Huawei bans, escalated semiconductor restrictions), and now kinetic with Russia/Ukraine. The major trends listed above are all now in the process of reversing, mostly out of necessity - for example, de-globalisation and reshoring as the US simply cannot be reliant upon China to make their military equipment and medical supplies.

The reversal of these trends and the rebuilding of a more resilient (albeit less efficient) system ultimately is likely to result in a capex boom focused on Energy, Transportation/Infrastructure, and Defense.

7. MACRO VIEW AND MOBILITY RECAP – WHERE WE ARE GOING

As noted above, we believe the World order and system are in the process of changing. Most importantly, we are shifting from an extremely efficient (but fragile) highly interconnected global system to a less efficient (but more resilient) regionalized system – simplistically, de-globalization. The prior highly globalized system was almost entirely reliant upon the USD (gold-backed until 1971, then oil-backed until recently); the new, regionalized system will be less reliant on the USD at the margin as trade will increasingly be priced in local currencies (already seeing this with China/Russia trading in rubles/yuan). In this environment, commodities, gold (neutral reserve asset), and real 'stuff' become more important.

In addition to this being a monumentally important change for the broader financial system, the reason we lay all of this out is these macro shifts meaningfully accelerate our views on the transformation of the Mobility landscape – namely the energy and transportation sectors. Change is now no longer an option; it's a necessity.

We are now seeing both real-world signposts that this transformation is happening (examples below), as well as a multi-trillion dollar fiscal spend pipeline that is set to accelerate the rollout in the 2H23 and on:

The CHIPS+ Act:

- Passed in August 2022. Focused on bringing the semiconductor supply chain, particularly manufacturing, back to the US.
- The roughly \$300 billion dollars has NOT even begun to be disbursed. Based on industry conversations, this should begin to flow in the 2H23 and even more so into 2024.
- This has already spurred hundreds of billions of planned upcoming spending in the sector – from TSMC's expanded Arizona fab, to Samsung's massive facility in Texas, to GlobalFoundries and Wolfspeed in New York. This will drive a semiconductor renaissance in the US.

The Inflation Reduction Act:

- Passed in August 2022. Focused primarily on the alternative energy ecosystem, manufacturing, and transportation infrastructure in the US.
- The over \$700 billion dollars in spending and incentives started in early 2023, but will accelerate in 2H23 and into 2024 as rules and requirements are clarified this spring.
- Similar to the CHIPS+ Act, this has already spurred hundreds of billions of dollars of planned capex announcements – from Tesla/Panasonic EV battery plant in Oklahoma, to Honda/LG Energy Solutions in Ohio, Ford in Tennessee/Kentucky, and Toyota in North Carolina. Just to name a few. This will drive battery materials and manufacturing to the US.

Infrastructure Investment and Jobs Act:

- Passed in November 2021. Focused primarily on transportation infrastructure, internet connectivity, and electric grid buildouts.
- The \$1.2 trillion in spend will begin to ramp in 2H23 and really into 2024 and beyond.
- We've seen a whole slew of industry spending announcements in response to this bill, from
- Verizon and others building out rural internet access to Chargepoint and Revel accelerating the buildout of the EV charging network. This will drive ubiquitous internet connectivity and EV infrastructure over the coming years.

The upcoming European Net Zero Industry Act:

- And finally, Europe's response to the Inflation Reduction Act is on the come. Expect formal announcements and more details by this spring.
- In anticipation, we've already seen TSM start to evaluate building a fab in Germany. And many solar PV manufacturers start to accelerate capex plans.

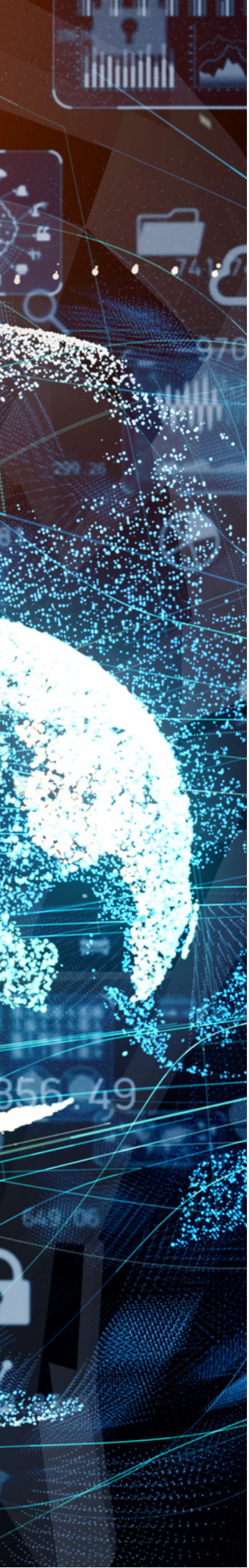
Overall, these are just a few of the announced fiscal packages by Western governments, with likely more to come. And while all of these in the US have already been passed into law with the spending AUTHORIZED, essentially NONE of the spending has actually even started. So effectively none of the trillions of dollars of funds, subsidies, or stimulus spend has even started! This spending should begin in earnest in the 2H23/2024 and carry on for years.

And on the real-world signpost side, the number of examples continues to grow:

On the Electrification theme. The reshoring of semiconductor, rare earth mineral and battery material supply chains is now a national security [imperative](#). As we highlighted years ago, semiconductors are the new oil. Energy independence is *critical*, particularly in a fracturing global system teetering on East vs. West war. The reshoring-driven capex boom has just begun (e.g. [TSMC building fab in AZ](#)). And now we have fiscal stimulus – such as the CHIPS+ Act (to incentivize the reshoring of semiconductor manufacturing to the US) and the Inflation Reduction Act (a transportation and energy-focused bill, with incentives for things such as EV purchases and EV infrastructure buildouts) – that will further **accelerate these real-world trends**. We believe that we are in the **first inning of a multi-year, multi-trillion dollar rebuild of critical supply chains** – hence why we are so positive on all of the inputs and enablers (noted above) over the next several years.



On the Automation theme. The reshoring of supply chains is labour intensive and replacing very low-cost labour in China with much higher-cost labour in the West will be expensive, inflationary, and negative for corporate margins. The result: corporates are accelerating their automation plans (e.g. [Amazon robots in fulfilment centres](#)). Similar to the necessity of the new energy supply chain buildout, this automation acceleration is critical to the functioning of supply chains – for example, we already have a truck driver shortage in the US that will be further exacerbated by rising e-commerce penetration and negative demographics; as such, we believe [autonomous trucking](#) is part of the solution.



While the private sector has already begun this once-in-a-generation buildout, we are hopeful the upcoming deluge of fiscal spending will mirror the productivity of the Interstate Highway Act of the 1950s and the Pacific Railway Act of the 1860s. Rather than unproductive (limited/no multiplier) direct stimulus checks, we expect these packages (and likely future fiscal bills) focused on energy and transportation to be analogous to the highly productive Interstate Highway Act – which created jobs, connected cities, allowed for suburban sprawl, etc. A positive chain reaction with a virtuous cycle. The confluence of the above fiscal spend hits on our VENN diagram of focus areas: Connectivity, Electrification, and Automation. As they include things like connectivity / smart city infrastructure, electric vehicle subsidies, critical supply chain (semiconductors, battery materials, etc.) buildout incentives, among others.

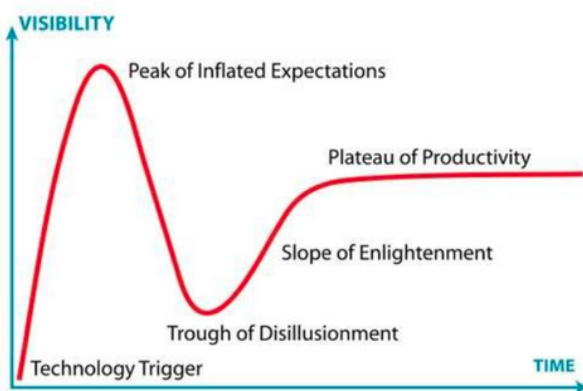
This new system buildout is in its infancy – we’re in the first inning. It will take years and trillions of dollars to build out, requiring a massive capex cycle. We are expecting a second Industrial Revolution in the US (and potentially the broader West) out of geopolitical necessity. And where you will want to be focused and invested is where governments will be directing and incentivizing these trillions of dollars. Our fund is one of few directly focused on these trends – from connectivity, to electrification to automation – and is incredibly well positioned to capitalize on the rollout over the coming years.

We expect the next decade is shaping up to look similar to the 1940/50s – with fiscal dominance, monetary impotence, inflation spikes, geopolitical tensions, and generally high volatility. This will require stock-picking (expect muted index level returns), patience, and vision. The heightened volatility will create significant opportunities (already beginning to see it today). And with our vision of how this decade is likely to play out, we believe we have an excellent roadmap and framework to capitalize on this rare opportunity. Effectively, we believe this is very similar to mid/late-2001 where Internet stocks had been decimated, yet the Internet revolution had just begun (details in Q&A #8). And we believe this revolution is going to be MUCH bigger than the Internet.

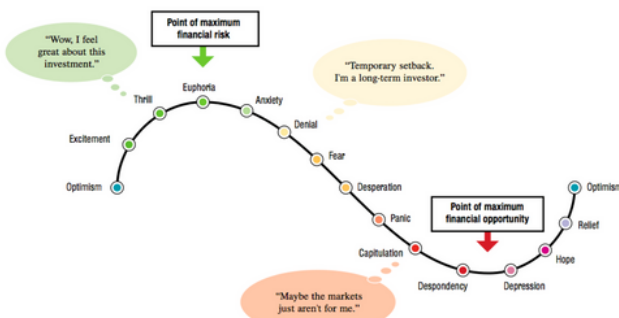
8. MACRO AND MOBILITY RECAP – A USEFUL ANALOGY

The Internet analogy and Gartner Hype Cycle provide a useful framework to analyze how technological innovations progress and how markets (humans) price them. Innovation continues and human nature does not change.

Gartner Hype Cycle



Source: Garner | https://en.wikipedia.org/wiki/Gartner_hype_cycle



Source: <https://optionalpha.com/blog/the-14-stages-of-investor-emotions-and-trading-psychology>

During the Dot Com craze, Amazon's stock was quite volatile, bouncing between ~\$50 and \$100 for over a year, before collapsing by over 90%. Investors did not discriminate – anything "Internet" related was thrown out.

The Market went from pricing in the "Peak of Inflated Expectations" (i.e. 'The Internet is going to be HUGE, BUY at any price!') to the "Trough of Disillusionment" (i.e. 'All Internet companies are scams, SELL at any price!') within about 18 months.

While the frauds (e.g. Pets.com, theGlobe.com) went to ZERO, the real companies (e.g. Amazon, Priceline) proceeded to explode higher over the coming years. For example, Amazon went from ~\$6/sh to \$3600/sh (600x). The non-discerning crash provided opportunities of a lifetime in 2001 for anyone who was prepared and saw the bigger picture. We believe we are beginning to see a similar setup today...



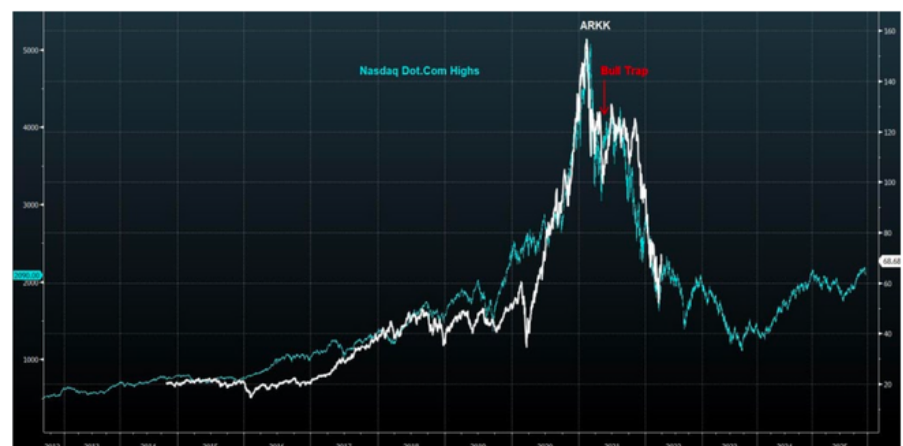


Similar to the Internet Dot Com boom, we saw an explosion of Mobility companies go public (via IPO and SPAC) in 2020 and early 2021. Our investable universe expanded dramatically, but the valuations were simply not attractive (see 'Peak of Inflated Expectations').

Since peaking in Feb 2021, the ARKK ETF – a proxy for growth/innovation stocks (though we certainly do not agree with all of the positions) – is down 76% and down around 30% since the start of 2020.



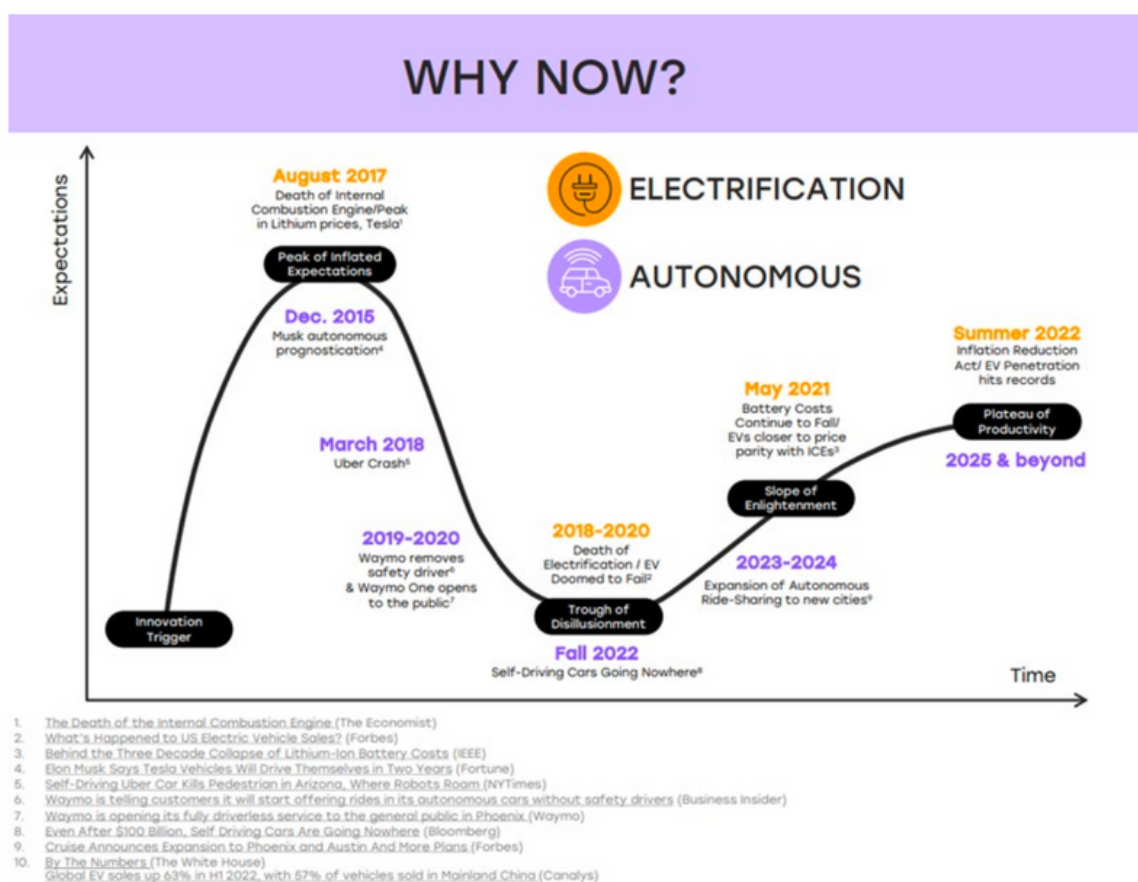
Maybe unsurprisingly, the price action of ARKK (2020-2022) has closely mirrored the price action of Internet stocks (1999-2001). Liquidity peaked (Y/Y) in around Feb 2021, and with it, a lot of stocks (notably growth) also peaked. Using the Dot Com bubble as a proxy, the majority of the damage has been done and we should see winners begin to bottom over the coming ~3-6 months – while losers will continue on their way to de-listing/bankruptcy. Our bottoms-up work also supports this view and estimated timeline, and we expect a clear dichotomy between winners/losers.



Overall, the parallels are clear. We expect a similar setup today. The Mobility Universe has dramatically expanded. Valuations and stocks have gotten crushed. Yet, similar to the Internet buildout of the early 2000s, the Mobility revolution is actually *accelerating* – partially out of necessity (which we address in Q&A #7 and our Q3 transcript). Electrification is the new fossil fuel. Autonomy is the new railroad/interstate highway. We are more confident than ever in our three-pillar framework (Sharing/ Connectivity, Electrification, & Autonomy) and the broader Mobility Revolution.

9. A DEEPER DIVE INTO THE CURRENT INNOVATION CYCLE

In the chart below, we provide a more detailed look at where we believe the technologies we are most focused on – namely, Electrification (Energy) and Automation – are on the innovation adoption curve.



Quickly summarizing the graph above:

- Electrification has come out of the trough of disillusionment phase (~2018-2020) and is hitting the kink in the s-curve. Adoption is likely to go mainstream and explode higher in the coming years. Penetration-wise, we're at the ~5% level, similar to smartphones in 2007-2009 (analogy discussed below), and headed much higher. Tesla's recent price cut combined with new subsidies will drive an exponential move.
- Automation is currently in the trough of disillusionment. It's been written off by the media, yet the tech adoption is actually accelerating. Which sets up for very unique and asymmetric opportunities for those paying attention.

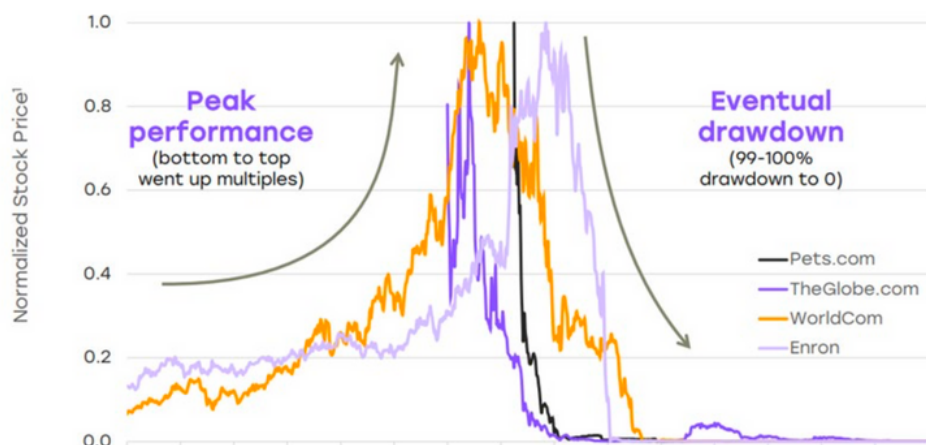
Looking quickly at two technological analogies to provide some context: First the Internet – which we touch on in detail in Q&A #8 as well:

- The current stock market progression continues to closely mirror what we saw in 2000-2002, with the Internet bubble and subsequent bursting – with ~2002-2003 the trough of the disillusionment phase for the Internet.
- As you can see in the graph below and in Q&A #8, ARKK vs. the more speculative Nasdaq back then remains almost a perfect fit. And would suggest a bottoming for the “real” names between now and Spring of this year.



We are running an Energy + Transportation fund ahead of what we believe will be the biggest Tech Revolution & upcoming Capex Cycle in a generation

- From here, the fake businesses like Pets.com of the last cycle or Electric Last Mile Solutions of this cycle still go to zero.

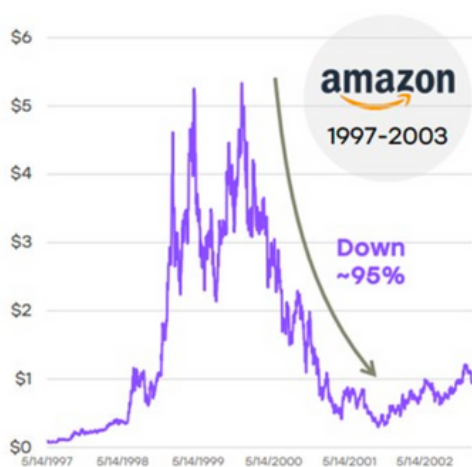


1. Data pulled from Bloomberg (10/06/1992 – 10/06/2012). Stock price normalized between 0 and 1

But the real businesses, which have been caught up in the broader correlated sell off, start to bottom and present potential once-in-a-generation entry points.

Amazon is a good example of one of the Internet's major winners.

- In 2002 everyone thought the Internet was dead (trough of disillusionment).
 - AMZN stock was down ~95% from the peak.
- But in reality, the Internet was just beginning to take off – similar to today, there was a huge disconnect between the real world vs. financial market.
- Over the ensuing decade+, the Internet turned into one of the greatest value-creating technologies out there.
 - AMZN stock went up 600x.

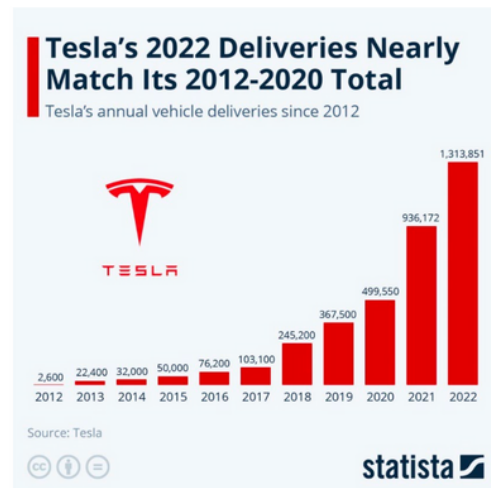


- We see the Mobility Revolution as analogous – many are writing it off, stock prices and valuations have been decimated, yet the actual trends in the real world are accelerating.
 - We view our Mobility Fund today as similar to having an Internet Fund in ~2002.
- Overall, this is a great case study on focusing on the forest and big trends, not the trees and short term fluctuations.

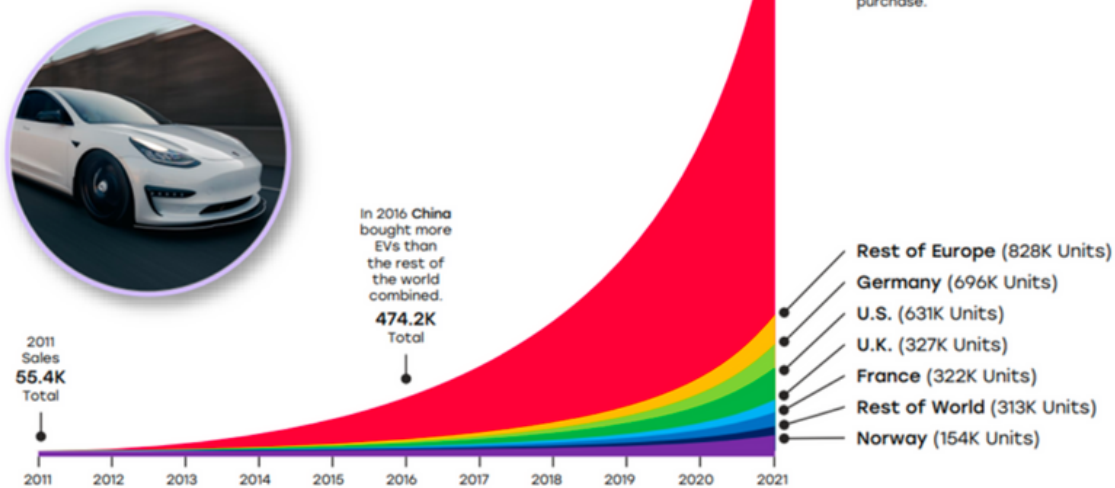
And second, the Smartphone (and coinciding Mobile Internet) cycle:

- Back in the early 2000s, it was difficult to identify the smartphone OEM winner – you had Apple, Samsung, Nokia, among many others all vying for the top spot.
 - This is similar to today's relatively long list of Auto OEMs – from incumbents like Ford, GM, and Toyota, to challengers, like Tesla, Rivian, and Lucid.
- But back then it was a lot easier to identify that smartphone penetration would go from ~5% to 50%+ over the coming years
 - Number of Smartphones sold to end users worldwide from 2007 to 2021 (in million units)

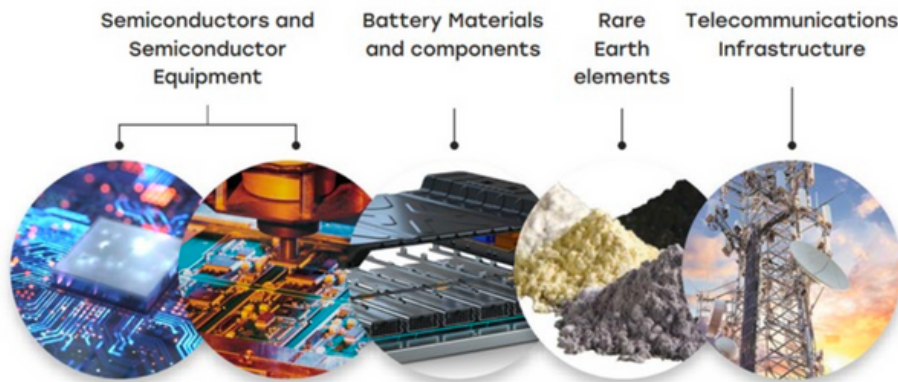
- Today's EV penetration % is similar to where smartphone penetration was back in the 2007 timeframe – low single digit %.
- We are at the kink in the s-curve where adoption starts to go exponential... and Tesla's recent price cuts are a HUGE signpost. Similar to the "iPhone" moment in 2007



Alternative Energy infrastructure buildout is critical parallel system to build as we DEGLOBALIZE.



- The best risk/reward investments in the smartphone cycle were the “blue jeans to gold miners” businesses – notably areas like semiconductors (such as AVGO, QCOM, SWKS) – as they sold into essentially all smartphones and didn't care who was making it. They benefitted from both rising volumes as well as rising content per phone. These stocks 10, 20, 30x'd over this tech cycle.
 - Vehicles are the next platform, the next smartphone. They are a smartphone on wheels, with rising content and complexity. There's a reason all the Tech giants like Apple, Google, and Microsoft are focused here.
 - And adoption-wise, we see EVs as similar to smartphones in 2007 – penetration is hitting an inflection point, low single digit % today going a lot higher in coming years. And the best opportunities are in the components going in – semiconductors, rare earth minerals, battery materials. As they will benefit from rising EV volumes and rising content per EV.



- Looking at car parc, remember today there are around 1.4B vehicles in the world... and only 15-20M are electric thus far. That's worldwide penetration of only 1-2%... There is a long way to go.

The smartphone analogy is particularly useful in highlighting how we think about stock selection and actually investing in these massive trends.

So now we have both historical analogs to provide context for where we think we are, as well as an updated graph for our view of the progression of these technologies along the innovation cycle. Below are a few significant signposts that give us increased conviction in these views and the likely path ahead.

On the **Energy / Electrification** side:

- Tesla price cuts. We think this is a big deal and an aggressive offensive move by the leader in the EV space with the lowest cost structure. We expect this will do a few things:
 - The lower price point should increase affordability and accelerate demand for EVs. Reiterating our point on hitting the kink in the s-Curve on the adoption front (above). Net, net demand should go up.
 - On the competitive landscape front, we expect this will accelerate the demise of poorly positioned legacy OEMs with inefficient cost structures, as well as undercapitalized marginal EV OEMs. We're already seeing a forced response from Ford cutting prices.
 - Given layers of vertical integration, Tesla is one of the only companies that actually have the margin to cut prices and the capacity to handle an influx on the demand side.



On the **Automation** side:

Waymo and Cruise tripled their city coverage. And Cruise highlighted the total time from start to actual rollout of a city has now compressed to 90 days... this compares to years to launch the first city.

- The point being, we're about to see an acceleration in city rollouts in the coming years. It's a lot easier to copy/paste and go from 1 to 3 cities and 3 to 6, than it is from 0 to 1.
- This all comes at a time when the media has completely written off autonomous technology – a clear sign of the trough of disillusionment, which is one of the best times to look for asymmetric opportunities.

And this is just on the “sexier” side of the automation of moving people front. Doing things and moving things is happening at an accelerated rate as we've highlighted many times before. The use cases are widespread:

- Quick example. Kodiak Robotics – a company focused on self driving trucks – just got a \$50M contract from the US army to automate military vehicles.

Overall, despite the financial market turmoil, it's clear the real world trends we are most focused on are accelerating. And we believe this offers a unique opportunity – similar to the 2002 timeframe with the Internet bust – where there is a mismatch between the real world and financial markets. And tech cycle adoption wise, we believe we are hitting the kink in the Electrification s-Curve – similar to where smartphones were in the 2007-2009 period – while Automation is in the trough of disillusionment, yet continues to progress and is finding its product/market fit.

10. CURRENT BEAR MARKET – OUR EXPECTED PHASES

Below is a quick summary of our expected phases for this current bear market. For more details, see our Q3 transcript and updated slide deck.

Phase 1: Liquidity Peak

- Started Feb 2021
- ARKK is emblematic of this, down around 80% since then

Phase 2: Duration Selloff / Inflation Shock

- Started Nov 2021
- Sell off broadened to more general long duration assets as interest rates began to rise
- Nasdaq and longer dated US treasuries down around 35% since then

Phase 3: Growth Slowdown

- This is the phase we are currently in and we expect it will accelerate this winter
- All economic indicators are decelerating, and earnings cuts are just beginning for many
- Sell off broadening to include cyclicals and commodity types – generally more economically sensitive names
- For example, Semiconductors are down over 45% from peak

- We expect rates will likely peak in this phase – likely sometime between December and February. And oil is likely to have a last push higher as the release from the Strategic Petroleum Reserve begins to slowdown and China reopens.
- On a relative basis, many of the growth names – down 60-95%+ — should start to bottom and outperform the cyclical names – many of which are secular losers – that is just starting to sell off – like Automation which is only down around 20%

Phase 4: Contraction

- As of now, we expect this phase to likely be ~spring of 2023 and entail
- significant earnings downgrades.
- But this phase is very path dependent – particularly reliant upon Fed actions as well as potential WW3 escalations
- Like in our last update, we continue to believe the more durable overall market bottom is likely ~spring 2023. But can certainly be sooner for names that have already taken significant pain

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