Payden&Rygel

POINT *of* VIEW

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Our Perspective on Issues Affecting Global Financial Markets

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Manufacturing Housing

The Key To More Affordable Housing

Imagine you're in the market for a new automobile. You call the car company, make a deposit, and a work crew shows up at your home to begin work a few weeks later. In your driveway or garage, they piece together your vehicle according to your specifications, with a few available options.

Depending on how busy they are and the vagaries of the weather, it might take a few weeks or months to complete the build. Your neighbors stop by each morning as they walk their dogs, sipping coffee and gazing in amazement as your car goes from a metal frame to a shiny, freshly-painted Toyota Camry before their eyes.

Absurd, right? Why would the car company ship the materials and send an army of highly-skilled workers to construct the car *in your driveway?*

«LET'S FACE IT: THE NEW HOME CONSTRUCTION PROCESS IS ANACHRONISTIC. AS A RESULT, WE ALL BEAR THE COSTS IN TERMS OF VASTLY MORE EXPENSIVE HOUSING.»

Yet we see this spectacle *every day* in new home construction. The onsite home building process is *so routine* that we don't give it a second thought as we drive past housing developments dotted with the 2" x 4" pieces of lumber that typify a new residential dwelling project.

Let's face it: the new home construction process is anachronistic. Consequently, we bear the costs of vastly more expensive housing. Virtually every other consumer product has been industrialized—mass-produced in factories—and inflation-adjusted prices have fallen *dramatically* over time. Not so for housing (*see Figure 1*). So, what's holding factory-built housing back? We are our own worst enemy in the battle for more affordable living.

IT'S NOT ALL BAD

First, before we anger your contractor or the home builder in your stock portfolio, we must admit that home construction *has* progressed by leaps and bounds in recent decades. As a result, homebuilders ship many components to the construction site pre-fabricated.

What's more, a new home in 2022 is a far cry from a new home in, say, 1973. In the U.S., homes are bigger—2,485 square feet today versus just 1,660 square feet in yesteryear.[1] Homes are more energy-efficient. They are decked out with better appliances. More homes have pools. Heating and A/C are now necessities, not luxuries. Ninety-six percent of new homes have A/C compared to just 49% in 1973. In many ways, comparing a new home in 2022 to an existing one built in 1973 is apples to oranges.

Ok, so far, we've been quite charitable. Now we will be less so.

Only 10% of homes are "factory-built" (*See Figure 2 on page 2*). "On-site" construction accounts for most houses, with 92% of homes built on wood frames. Weather distorts construction activity in parts of the country.

Productivity in single-family home construction has stagnated for decades. Output per hour in single-family construction rose just 10% from 1987 to 2016, or 0.033% annually.[2] As a consequence, it takes *forever* to build a new home. Ok, not forever, but official data from the Census Bureau shows that in 2021 it took 12.1 months to custom-build a single-family home from the first shovel breaking ground to the owner walking in. Five decades ago, it took "just" 7.2 months.[3]

The lack of progress in home construction hinders the overall economy as well. Requiring more resources at higher prices to build a home, housing investment and services continue to make up 15-18% of GDP, whereas a maturing, more efficient industry *falls* as a share of total output in a healthy economy, freeing up resources to be used elsewhere.[6]

It's no surprise then that housing is *expensive*. So what's the alternative, you wonder? Our take: *manufacturing* housing.

«HOUSING INVESTMENT AND SERVICES CONTINUE TO MAKE UP 15-18% OF GDP, WHEREAS A MATURING, MORE EFFICIENT INDUSTRY SHOULD BE FALLING AS A SHARE OF TOTAL OUTPUT IN A HEALTHY ECONOMY.»

MAKING HOUSING CHEAP AGAIN

We can almost hear the reader's groans. When people hear "manufactured housing," they immediately think of "mobile homes," "trailer parks," and, well, "trailer trash."[4]

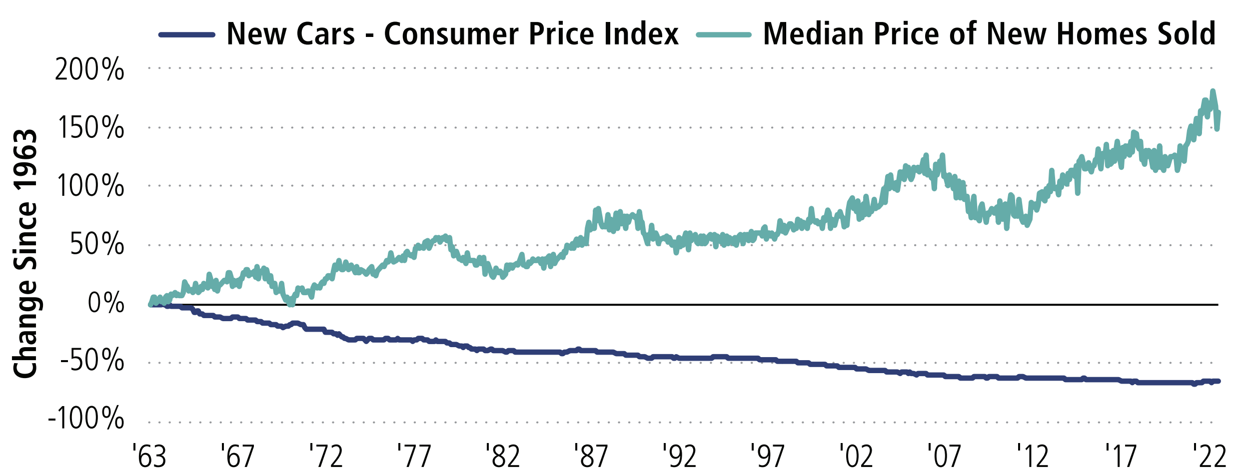
But, put aside your biases for a moment. Manufactured homes are "built entirely in the factory, transported to the site, and installed under a federal building code administered by the U.S. Department of Housing and Urban Development (HUD)."

Since 1976, the Federal Manufactured Home Construction and Safety Standards (commonly known as the HUD Code) "have overseen manufactured housing design and construction, strength and durability, transportability, fire resistance, energy efficiency, and quality. The HUD Code also sets performance standards for the heating, plumbing, air conditioning, thermal and electrical systems." So newer manufactured homes are not necessarily less safe, less durable, or less equipped than site-built alternatives.

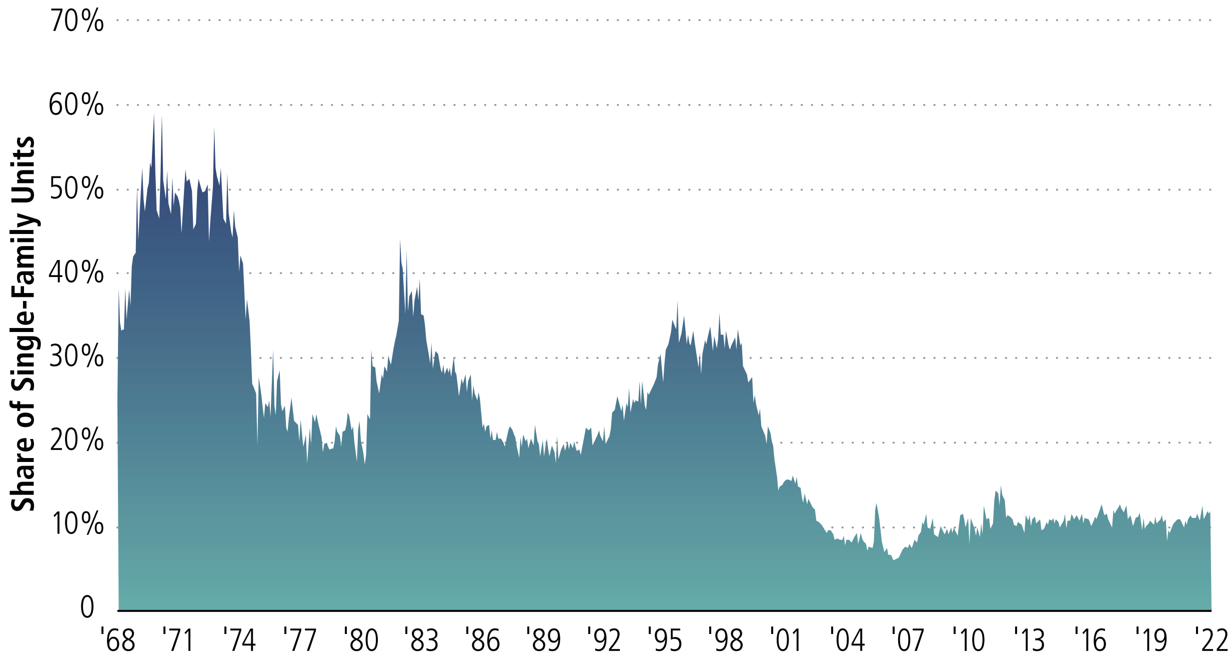
Moreover, manufactured homes *are* cheaper—and in some cases *far* more affordable—than the stick-built single-family dwellings that likely dot your community. According to the Manufactured Housing Survey, a new manufactured home, including installation, cost $66.97 per square foot in 2021 compared to $143.83 for site-built units (*see Figure 3 on page 2*).[5]

Housing experts have been calling for more productive and cheaper production for decades. Back in 1937, the chief engineer of the Federal

fig 1. PRICE GOUGING: REAL (INFLATION-ADJUSTED) PRICE OF NEW VEHICLES VERSUS REAL HOME PRICES



Source: Bureau of Labor Statistics, U.S. Census Bureau *fig 2.* HOME SWEET HOME? FACTORY-BUILT HOUSING AS A SHARE OF TOTAL SINGLE-FAMILY HOME CONSTRUCTION



Source: U.S. Census Bureau, Payden Calculations

if allowed at all. For example, in San Jose, one of America's least affordable cities, 94% of residential areas restrict construction to detached single-family homes only.[7] No wonder shelter is pricey!

Manufactured housing is even more challenging to build than apartments. As a result, zoning often bans factory-built homes outright, confines them to "housing parks," or restricts them by requiring builders to apply for expensive conditional use permits.

We get it. Local officials, like aspiring homeowners, want spacious single-family homes with large kitchens, backyards, garages, and gardens (so do your authors!). But, in effect, local zoning ordinances put a floor under house prices in cities. By disallowing small apartments, mobile homes, manufactured homes, and the like, "zoning has merely locked out everyone who cannot clear that floor."[8]

Housing Administration, A.C. Shire, weighed in, saying, "in an age of large-scale financing, power, and mass production, we have the anachronism that the oldest and one of the largest of our industries, concerned with the production of one of the three essentials of life... follows practices developed in the days of handwork...is bogged down by waste and inefficiency, [and] is unable to benefit by advancing productive techniques in other fields."

He continued, "Unlike other widely used commodities, shelter is not made in a factory or plant organized for its production..."

Decades later, in 1970, the cover story of the American Legion Magazine asked, "Why Can't People Get Homes?" In this article, L.A. Knight discussed how returning Vietnam veterans had difficulty finding housing. Knight wrote, "It almost seems silly to explain that mass production to standard specifications in a factory is the key to producing any goods, including houses, at prices far below what hand labor at the customer's site can meet. Housing is about the only common product that has escaped the industrial revolution and still hews to basic procedures that are 400 years old."

If factory-built housing presents a good option, what's holding it back? Two key factors: financing and zoning restrictions.

FINANCED OUT

The eagle-eyed reader viewing *Figure 2* (above) will no doubt notice the steep plunge in manufactured housing shipments as a share of total single-family home production beginning around 1970. What happened? In 1968, the U.S. Department of Housing and Urban Development (HUD) introduced a series of programs that subsidized the construction of stick-built housing (but not factory-built housing). One famous program, the so-called "Section 235," provided mortgages at interest rates as low as one percent for buyers purchasing a home built on-site. Buyers of factory-built homes, specifically manufactured homes, were not eligible. These subsidies shifted demand to inefficient technology, the stick-built technology, and away from factory homes.

Further, manufactured homes are not classified as real property but as "personal property," making them ineligible for mortgage loans. Instead, buyers financing the purchase of manufactured homes take out "chattel loans" at higher rates and shorter maturities than government-subsidized, 30-year fixed-rate mortgages available to site-built homes (e.g., 1970 saw the birth of Freddie Mac).

ZONED OUT

Building methods are one thing, but even if you can build efficiently, you can't build anywhere and make it easy for buyers to finance purchases, so you may *still* have a problem. Unfortunately, local policymakers are so clueless on the housing front that it is difficult to take them seriously.

Zoning is enough to put most readers to sleep, so we'll provide a quick summary: zoning ordinances implemented across the country restrict what can be built and where. In the U.S., apartments are banned in at least 70% of residential areas of major cities and typically higher in the suburbs

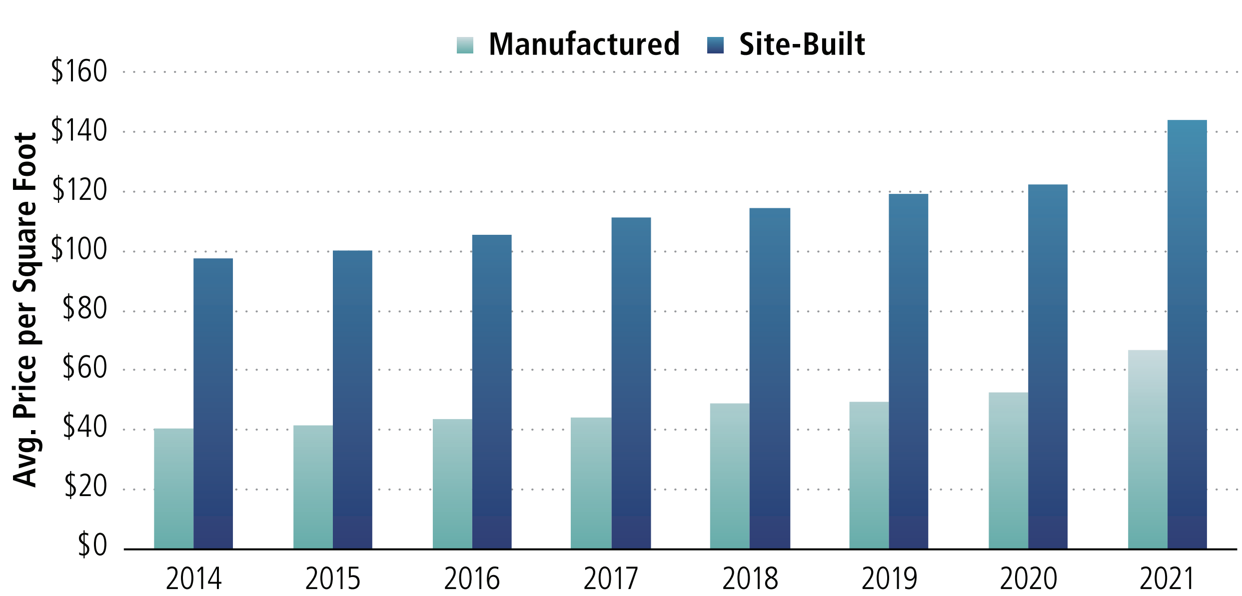
«WE GET IT. LOCAL OFFICIALS, LIKE ASPIRING HOMEOWNERS, WANT SPACIOUS SINGLE-FAMILY HOMES WITH LARGE KITCHENS, BACKYARDS, GARAGES, AND GARDENS (SO DO YOUR AUTHORS!). »

"WHY WE HAVE A HOUSING MESS"

In 1947, Thurman Arnold, who had been President Roosevelt's Assistant Attorney General for Antitrust, and the namesake for the Arnold-Simons model of monopoly, the predecessor of the Cournot model mentioned above, wrote an article in *Look* magazine called "Why We Have A Housing Mess."

Arnold asked, "Why can't we have houses like Fords? For a long time, we have heard about the mass production of marvelously efficient post-war dream houses, all manufactured in one place and distributed like Fords. Yet nothing is happening. The low-cost mass production house has bogged

fig 3. THE PRICE ISN'T RIGHT: COST OF BUILDING A SINGLE FAMILY MANUFACTURED HOME VERSUS SITE-BUILT HOME



Source: Manufactured Housing Survey - U.S. Census Bureau

«SO ARE YOU SERIOUS ABOUT MAKING HOUSING MORE AFFORDABLE?»

down. Why? The answer is this: When Henry Ford went into the automobile business, he had only one organization to fight [an organization with a patent] . . . But when a Henry Ford of housing tries to get into the market with a dream house for the future, he doesn't find just one organization blocking him. Lined up against him are a staggering series of restraints and private protective tariffs."[9]

Since 1947, staunch interests have been lined up against progress in housing. Our contention is NOT that everyone should live in a trailer or a flimsy, cheaply built mobile abode. Instead, we want to burst the notion of what constitutes housing production (i.e., only expensive, single-family dwellings far afield from areas of commerce). Doing so could unleash untold possibilities about what can be built, how quickly, by whom, and where.

So, are you serious about making housing more affordable?

ENDNOTES

1. "Characteristics of New Housing." *United States Census Bureau*, Accessed September 14, 2022.
2. Leo Sveikauskas, Samuel Rowe, James D. Mildenberger, Jennifer Price, and Arthur Young, "Measuring productivity growth in construction," *Monthly Labor Review*, U.S. Bureau of Labor Statistics, January 2018, https://doi.org/10.21916/mlr.2018.1
3. "Average Length of Time from Authorization to Start." *New Residential Construction*, U.S. Census Bureau, https://www.census.gov/construction/nrc/pdf/avg_starttocomp.pdf.
4. While "manufactured" housing can't shake the mobile home stigma, other factory-built options may. For example, modular housing is factory built but does not arrive on a chassis. Same for panel-built options.
5. "Manufactured Housing Survey." Cost & Size Comparisons: New Manufactured Homes and New Single-Family Site-Built Homes, 2014-2021. *U.S. Census Bureau*
6. "Housing's Contribution to Gross Domestic Product." *NAHB*. Accessed September 14, 2022.
7. M. Nolan Gray. "Arbitrary Lines: How Zoning Broke The America City And How To Fix It." Washington: Island Press Books, 2022.
8. Gray, 57.
9. James A. Schmitz, Jr. "Solving the Housing Crisis Will Require Fighting Monopolies in Construction." *Federal Reserve Bank of Minneapolis*. Accessed September 14, 2022.

The Original Stable Coin

Sterling And The Enduring Myth of Monetary "Stability"

Depositors panic, frantically withdrawing funds from institutions whose reputations are in tatters. The institutions, unable to meet the demand from depositors seeking to retrieve their hard-earned money, face three options: suspend withdrawals, sell themselves at bargain prices to competitors, or, as a last resort, face insolvency.

Sound familiar? Yes? But here's the thing: we aren't describing the cryptocurrency stablecoin marketplace of 2022. Instead, we describe a panic that erupted in the London banking system in *1825*.

In the 1820s in Britain, at the time the center of the global financial system, hundreds of banks issued their own banknotes. Of course, the banks *promised* a stable "peg" between banknotes and real "money" in the narrowest sense (e.g., gold coins). Depositors enjoyed the ease of transacting in bank notes or on credit instead of lugging gold coins around London (easy targets for rogues and thieves).

«REMINDING US THAT SO LITTLE IS NEW UNDER THE SUN, ESPECIALLY IN FINANCE.»

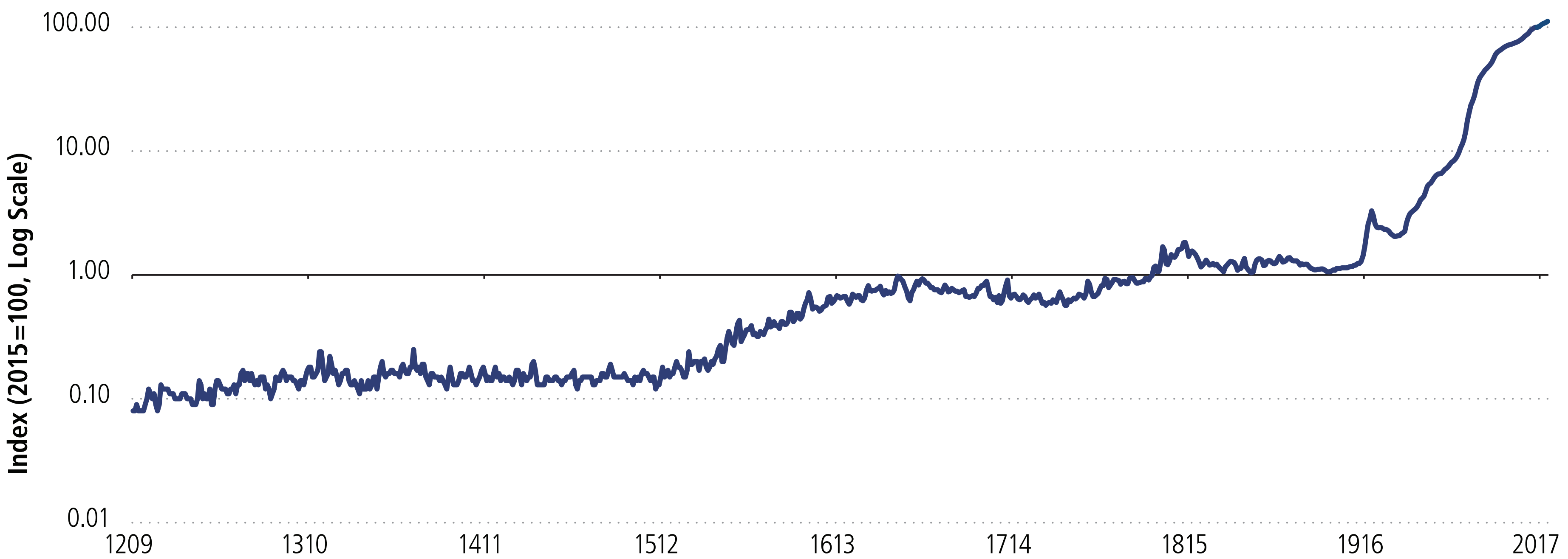
For banks, a bevy of new deposits allowed money to be lent out by the boatload to borrowers, earning income along the way. Approximately 600 new joint stock company banks launched in 1824-1825 alone! Eyewitnesses in the 1820s marveled at the economic boom that ensued. "The abundance of money has led to a variety of speculations in England, and scarcely a week has passed but some new company was founded to direct a world projected adventure. What must be the cure of this mania only time can show," recalled one account.[1]

The boom ended once suspicious depositors began exchanging paper notes for "hard currency," e.g., gold coins. Banks that had promised customers a "stable" link between paper and coin found it difficult to deliver.

«TO CUT TO THE CHASE, WE WILL SEE THAT STABILITY ITSELF IS AN ELUSIVE, PERHAPS IMPOSSIBLE GOAL..»

A similar story played out in the burgeoning crypto space in 2022, reminding us that so little is new under the sun, especially in finance. Crypto "stablecoins" are no longer mere fodder for fringe finance either. In the minutes of the July 2022 Federal Open Market Committee (FOMC) meeting, "Some participants commented on the financial stability challenges posed by digital assets…including stablecoins, were subject to vulnerabilities—such as runs, fire sales, and excessive leverage—similar to those associated with more traditional assets."[2]

We look to history to help inform the present and the future. So what can we learn about the stability of currency from the long-running *fig 1.* MUTED MONETARY MOVES: CONSUMER PRICE INDEX IN THE U.K. SINCE 1209



Source: Bank of England

success of the British pound sterling? To cut to the chase, stability itself is an elusive, perhaps impossible, goal.

WHAT'S IN A NAME?

"English money was first called sterling in the late eleventh or early twelfth century," writes Nicholas Mayhew in *Sterling: The History of a Currency*, his magisterial account of English money over nearly a millennia. Sterling takes its name from the original metallic content of the coins: silver. While the earliest mention of sterling dates from the eleventh century, "the idea of the pound as a weight of silver set monetary value...occurred in the time of Offa and Charlemagne in the eighth century."[3]

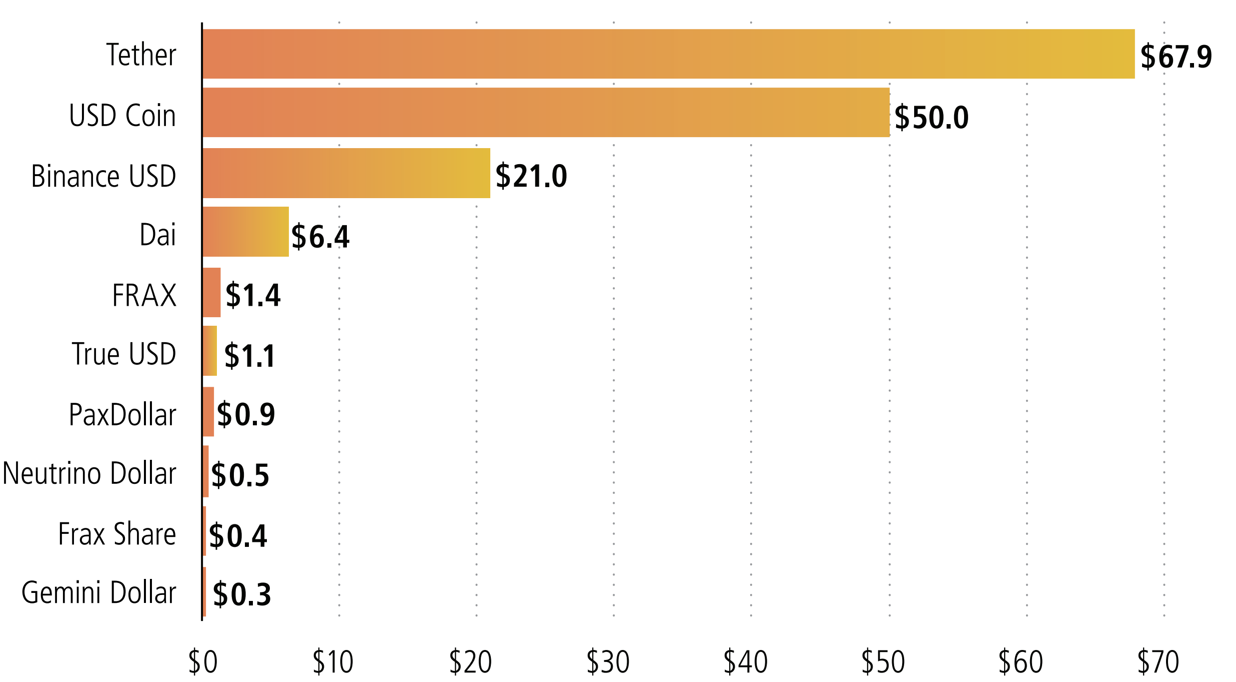
The "pound sterling" existed as a pound weight of silver of sterling fineness (i.e., 92.5% pure silver) until the mid-14th century, when the "pound" (as a term for the money) began to diverge from the "pound" (as the weight of silver). The word "pound" derives from the Latin term *libra*, abbreviated as *li* or *l*, and dates back to the Romans. Unsurprisingly, the £ symbol used to denote the British currency looks like an "L" to this day.

Economic data stretching back to 1209 shows the remarkable "stability" created by this metallic currency (*see Figure 1*). England enjoyed more or less stable prices from about 1300 to 1500 and then again from 1650 to 1750. Moreover, by 1560 the pound's amount of silver stabilized at a level that "hardly changed" until the nineteenth century, a remarkable feat of monetary stability!

Monetary debasement was almost unheard of in England, unlike most of medieval Europe, where currency debasement was commonplace. Debasement occurred when kings restruck coinage and chipped off a few extra pieces for their royal coffers, reducing the valuable metallic content.

Stable money had many benefits besides maintaining the average person's purchasing power. "Precious-metal currencies made for surprisingly international financial markets," as English coins from the time period have been found strewn across the European continent, suggesting that trade conducted in sterling thrived as trust in the quality of money was high.

fig 2. IS THE NEXT CABLE STABLE?
TOP 10 STABLE COINS BY MARKET CAPITALIZATION



Source: Messari

STABLE—BUT FOR HOW LONG?

According to Mayhew, "Scholars, economists, and government ministers have for centuries sought a stable currency, and many have put their faith in metal without really grasping that the value of silver and gold will vary in accordance with supply and demand just like any other commodity."[4]

Based on sterling's, well, sterling, early track record, it's understandable that many historians mistake metal content for stability. Indeed, Isaac Newton and John Locke were "seduced" by the idea of stable money. Another luminary of economics, David Ricardo, was also interested in metal money as a stable gauge of value. The desire for stability drives interest in a "return to the gold standard" and motivates "inflation targeting" central banks. It's all about *stability*.

But, Mayhew counsels against the stability allure, saying, "... currencies do vary, and it is a mistake to pretend otherwise."[5] Even if the supply of money is held constant by a fixed supply of metal coins and the metallic content of the coin remains the same, the *demand* for silver (or later, gold) varied, influencing the purchasing power of money and therefore prices.

Beginning in about 1515, prices in England started to rise steadily. After more than a century of stable prices, everything started to cost more. The average person also learned a brutal lesson about inflation: inflation *redistributes* wealth. People on fixed incomes suffered, while those with assets (e.g., agriculture for sale or personal use) or goods to sell or the ability to negotiate prices could at least tread water. Mayhew noted that, like now, the average laborers "wages followed the rise in prices only slowly."[6] And, worse, "…prices always rise much more easily than they fall."[7]

What caused the post-1515 inflation? Mayhew says, "obviously the supply of money but also the demand for it." First, mining picked up in central Europe, and the Portuguese brought extracted gold back from Africa. After 1545, the supply grew as Spanish bullion arrived from Potosi (in modern Bolivia). Henry VIII bucked

Continued on page 7

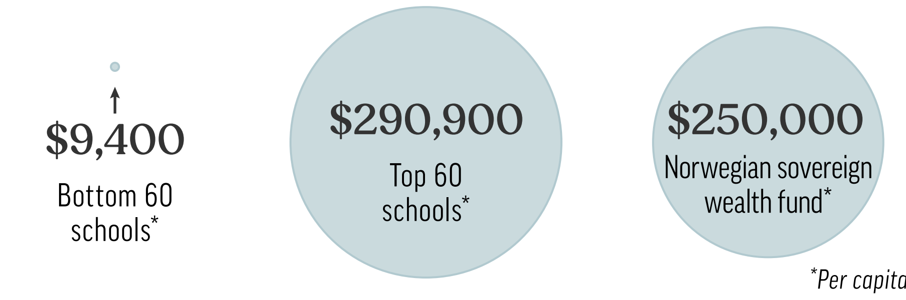
Endowment Education

What We Know About College Endowments

What are the basic facts about U.S. college and university endowments? That's the question we asked ourselves as we perused the National Association of College and University Business Officers' (NACUBO) annual report on college endowments. To save the reader time and effort, we visualized some of the report's data, which covers more than 600 schools with combined endowments of more than $800 billion, to show four different perspectives on endowments.

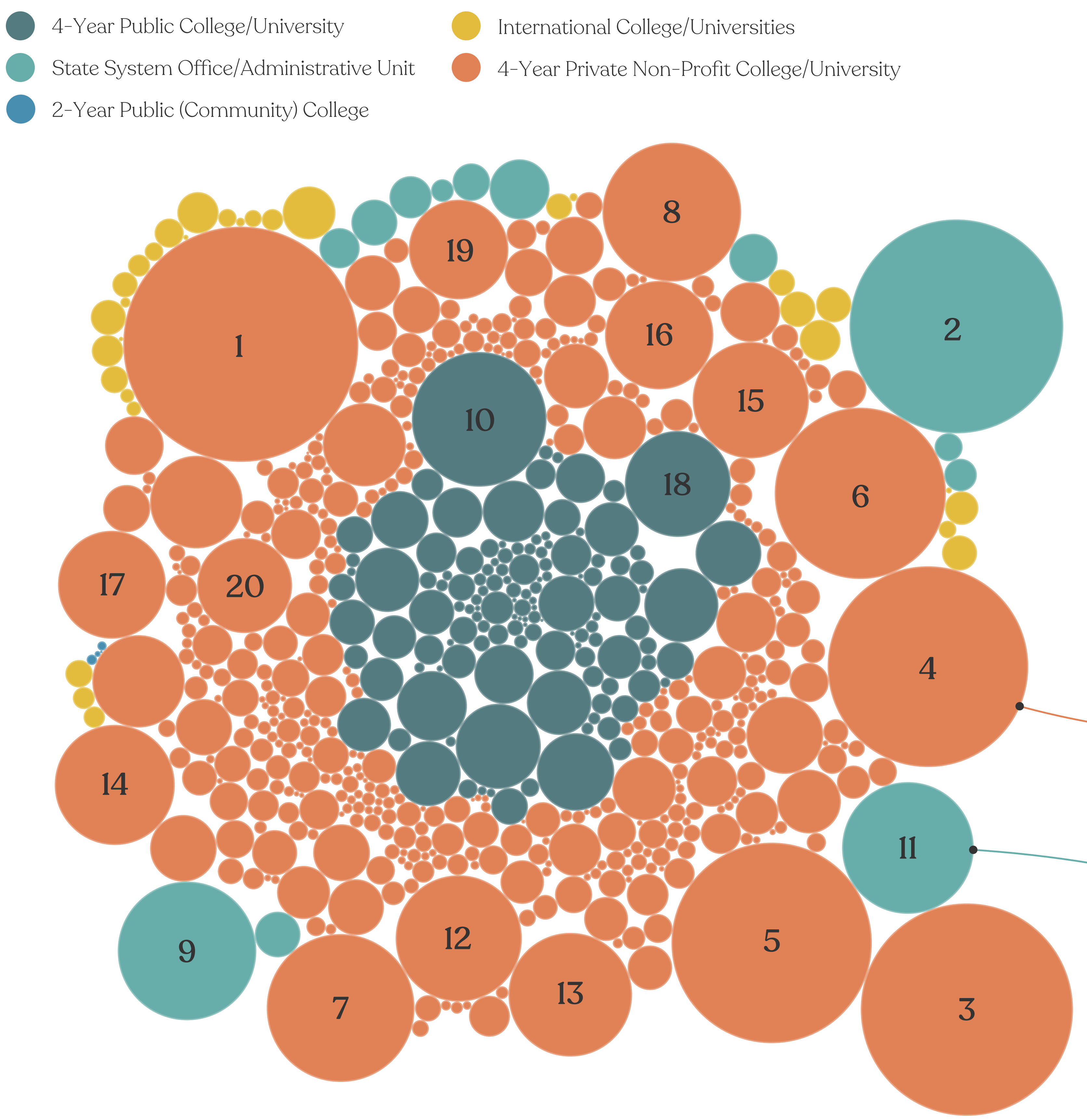
Per-Student Endowment

The average endowment per student for the 60 schools with the smallest endowments in the NACUBO dataset was **$9,400.** Conversely, the endowment per student for the 60 largest schools was **$290,900**! For the remainder, it averaged $52,400. For comparison, Norway's sovereign wealth fund, the largest in the world at $1.2 trillion, manages **$250,000 for every Norwegian.**



*Per capita

Endowment Size

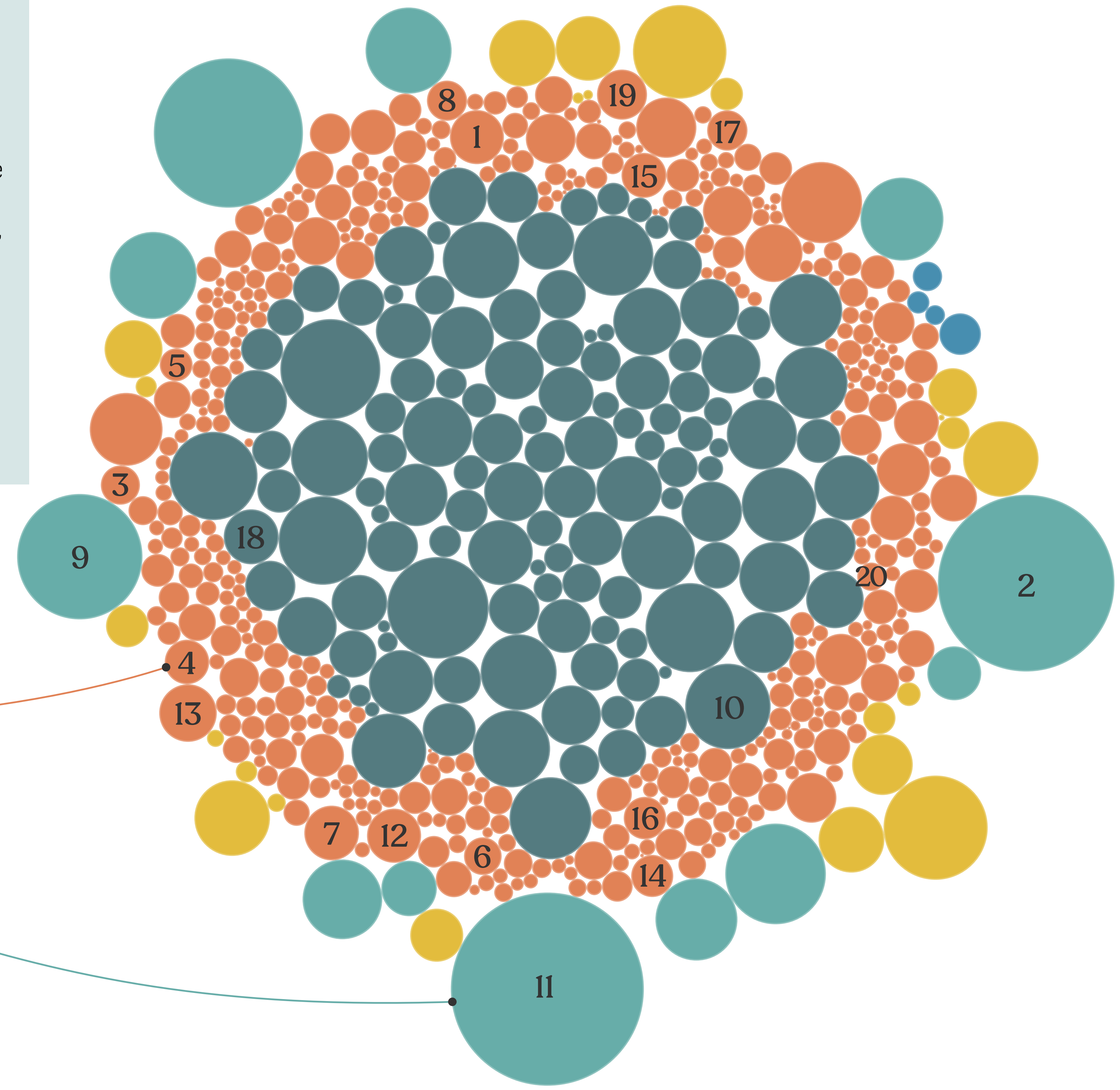


Endowment vs. Enrollment Size

On the left side of the page, the size of the bubble represents **the size of the endowment.** On the right side, the bubble represents **the number of enrolled students** in the institution. Some schools, particularly the state system, have grown more quickly due to asset selection, less spending, and fundraising.

For example, compare schools number 4 and number 11.

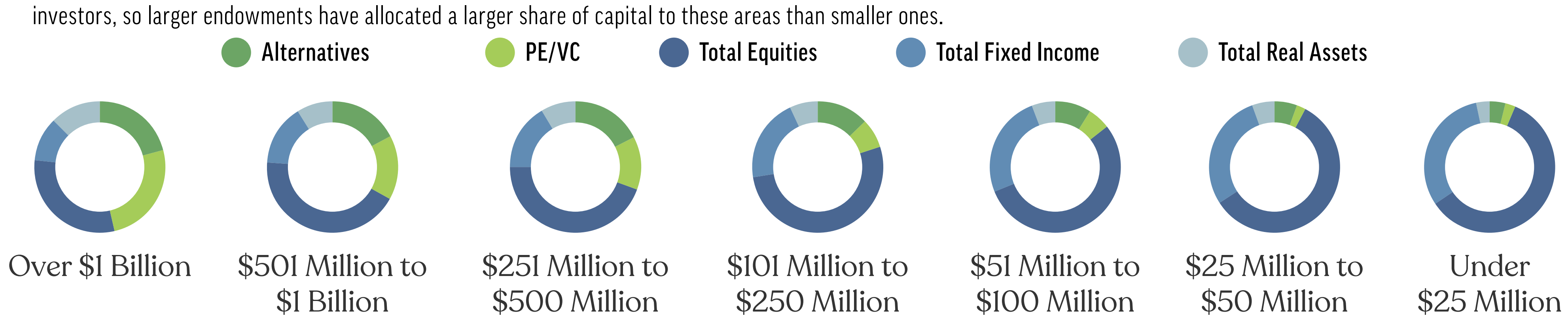
Enrollment Size



Source: 2021 NACUBO-TIAA Study of Endowments (NTSE), American Council on Education

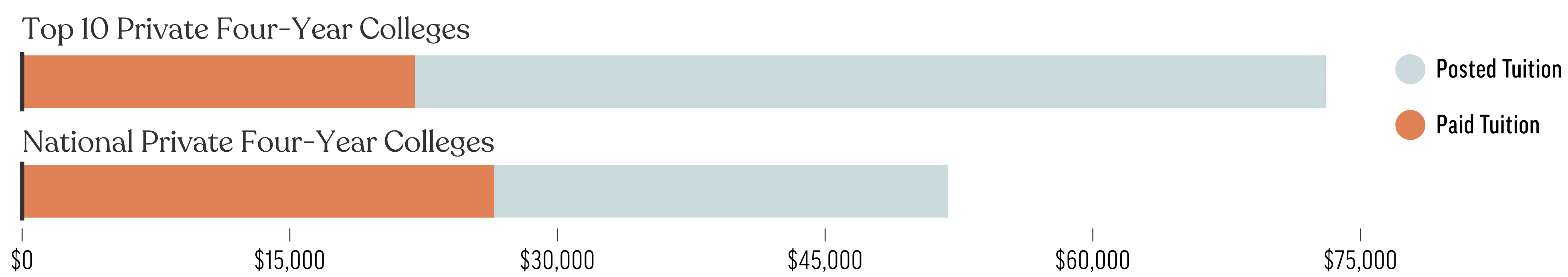
Investment Style

We find asset allocation has a lot to do with endowment size. It's not as simple as saying that larger endowments have better asset allocations but different asset allocations. Schools with smaller endowments generate less income, so they tend to keep a more significant portion of their assets liquid in the public markets. They cannot lock up their investment in private equity and venture capital for decades. Private equity and venture capital are asset classes less accessible to smaller investors, so larger endowments have allocated a larger share of capital to these areas than smaller ones.



In Defense of Endowments

Much like a person can live off their personal endowment (e.g., a 401k) in retirement, colleges rely on endowments to pay for services not covered by tuition. The cost of college tuition has grown at almost twice the pace of overall consumer price inflation over the last 20 years (5% versus 2.5% annually)! So it is no surprise that while the top 10 private colleges charge $73,000+ in tuition, the average "discount" is 70%, bringing the price to $22,000 for the average student at these elite institutions. Affordability is the power of endowments.



Continued from page 4

the English tradition of monetary stability and reduced the metal content of gold coinage by 10% and silver by 11%.[8] In Mayhew's words, "The Tudor debasement remains the single greatest fraud deliberately carried out by any English government on its own people"--as the crown earned £1.27 million at a time when the national money supply was less than a million pounds.[9]

While central banks dominate the landscape today, in the 1500s, mints drove "monetary policy." During Elizabeth, I's reign (1558-1603), the supply of sterling rose by £100,000 annually, and the money supply more than doubled. Prices shot higher as a result.

It was also apparent to many that physical money was the key to inflation *and* growth. "If money grew scarce, all trade slowed, both international and domestic."[10]

«...PRICES ALWAYS RISE MUCH MORE EASILY THAN THEY FALL.»

"YOU KEEP USING THAT WORD, BUT I DO NOT THINK YOU KNOW WHAT IT MEANS"

At this point, we can crystalize what we mean by "stability" and make good promises to the reader. So what lessons can we glean from British financial history for today's stablecoins?

First, the yearning for stability has centuries, millennia of precedent. Change, not stability, is the common denominator in history. In fact, the periods with the *most* stability featured *little* growth and few changes in the lives of ordinary people.

Modern crypto acolytes understandably lament the volatility of Bitcoin and Ether while seeking stability by using stablecoin tokens "pegged" to the USD, one for one, as an anchor. As you'll recall,

«THE TUDOR DEBASEMENT REMAINS THE SINGLE GREATEST FRAUD DELIBERATELY CARRIED OUT BY ANY ENGLISH GOVERNMENT ON ITS OWN PEOPLE.»

London banks greased the wheels of commerce by making transactions trustless and easy. Similarly, crypto stablecoins promised to make it easier to transact on the internet, 24 hours a day, seven days a week. As a result, speed, ease of use, and global instant payments did follow and gained significant popularity. Sterling's long history is replete with banks conducting similar activities to modern stablecoin issuers, offering bank notes backed by a seemingly more stable currency (sterling). Yet crises erupted with disappointing regularity throughout British history (not just in 1825).

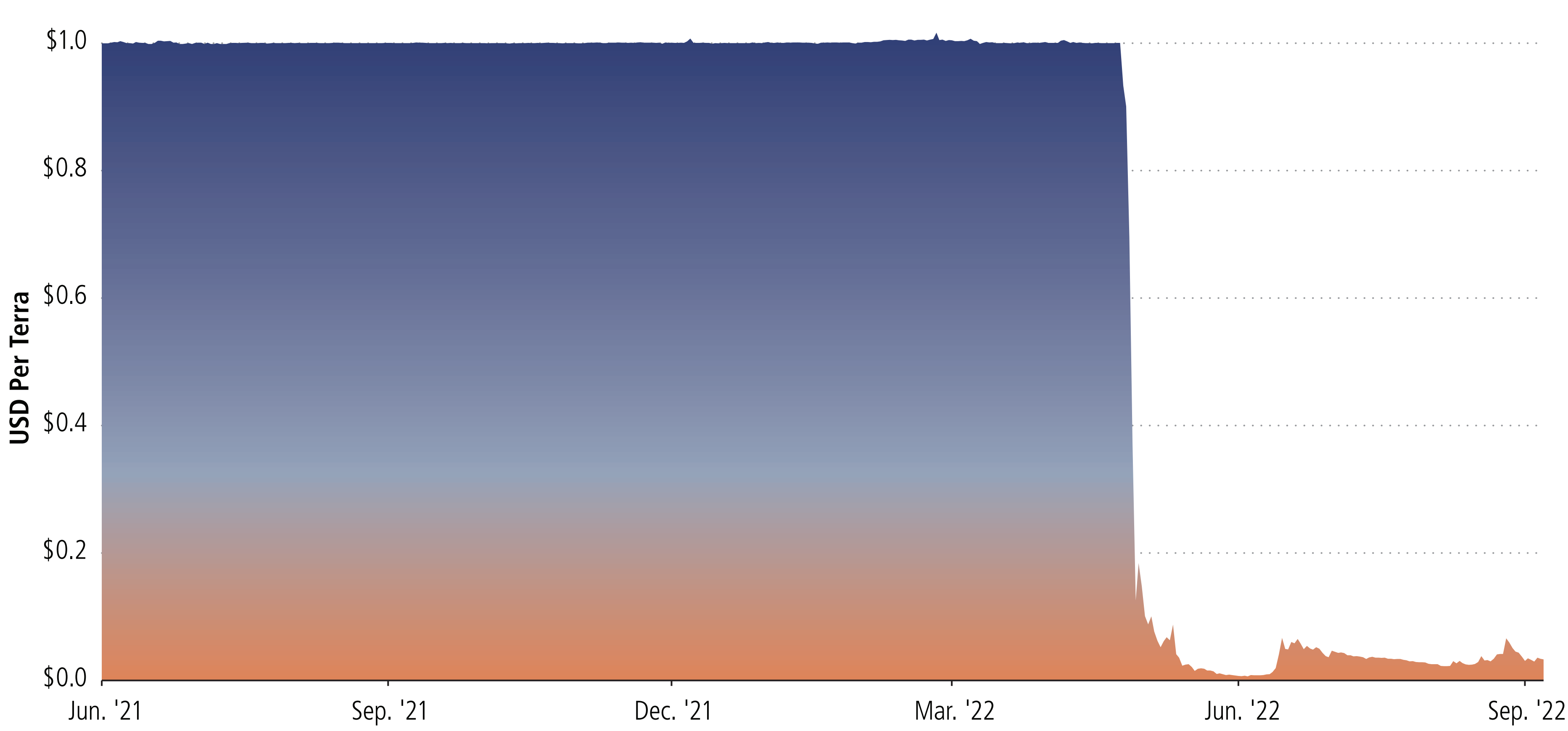
Today, three of the top 10 crypto assets by market capitalization are stablecoin varietals: Tether ($68 billion), US Dollar Coin, or USDC ($50 billion), and Binance USD ($21 billion) (*see Figure 2 on Page 4*).[11] While each coin differs, each promises to hold a 1-for-1 peg with the USD by holding reserves (similar to a money market fund). The TerraUSD reached a market cap peak of $18.6 billion on May 2, 2022, before collapsing as "depositors" ran on the currency (*see Figure* 3). Instead of using reserves to back the 1-for-1 dollar peg, TerraUSD used a more complicated "algorithmic" backing, which failed under stress.

Sterling's history teaches us that the quality of money is just as important as quantity and that instability is the norm rather than the exception. Investing, particularly when a product proclaims stability, requires constant vigilance.

ENDNOTES

1. Nicholas Mayhew. "Sterling: The History of A Currency."
2. Minutes of the Federal Open Market Committee, July 26–27, 2022, released August 17, 2000.
3. Nicholas Mayhew. "Sterling: The History of A Currency," xi.
4. Nicholas Mayhew. "Sterling: The History of a Currency," xi.
5. Mayhew, xii.
6. Mayhew, 41.
7. Mayhew, 51.
8. Mayhew, 44.
9. Mayhew 47.
10. Mayhew 70.
11. Messari.com

fig 3. TERRA TERROR: TERRA-USD EXCHANGE RATE



Source: DAR Crypto Reference Rate

Barking Up The Wrong Tree

What Pets and Vets Teach Us About The Covid-19 Economic Recovery

Here's a problem I keep running into: pet owners who can't get an appointment with a veterinarian.

While I've been fortunate enough that my four-legged feline roommate, nicknamed Kitty, is healthy and in no need of a vet, my colleagues with cats report a staggering vet shortage. A Covid-inspired "pet adoption boom" seems to be the preferred media narrative to explain the dearth of Dr. Doolittles—too many pets adopted during Covid—swamping the available resources in the pet service economy. However, is it true? What better place to start than a copy of the American Veterinary Medical Association's (AVMA) Pet Ownership and Demographics Sourcebook (yes, my weekends are fun-filled affairs)?

As it turns out, the story is a bit more complicated. Below, we discuss why the "pet adoption boom" theory is wrong and why there still might appear to be a shortage of vets. Whether you prefer cats or dogs, we suspect you will learn about the economy, labor markets, and post-Covid recovery. So, grab your leash, and let's take a walk.

PANDEMIC PUPPIES OR COVID CATS?

During the Covid-19 pandemic, we noticed a lot of headlines about a "pet adoption boom." Stories with headlines like "Americans adopted millions of dogs during the pandemic" and "Dog, cat adoptions boom during COVID-19 pandemic" were common.[1] Even the White House welcomed a new occupant, a German Shephard named Commander, now residing at 1600 Pennsylvania Avenue.

> **«SHELTERS RECEIVED 32% FEWER DOGS AND 23% FEWER CATS IN 2020, SO EVEN IF YOU WERE IN THE MARKET FOR MAN'S BEST FRIEND YOU'D HAVE BEEN OUT OF LUCK." »**

Anecdotally, we held a Zoom hangout (remember those?) with our colleagues and their pets, many of whom were infamous for their zoomies on Zoom work calls. The pandemic seemingly sparked a pet trend. Moreover, households with higher incomes who own homes are more likely to have pets, including many of our most fortunate colleagues. Between 2016 and 2020, pet ownership was "11% higher for those making $75,000 and 25% higher for people living in a house."[2] And people who "worked remotely and had a household income of $100,000 or higher were nine times more likely to get a new pet during Covid-19 lockdowns."[3]

Alas, fast forward two years later, and the data does not support the Covid-19 "pet adoption boom" thesis—pet adoptions fell during the pandemic. That's right, the number of pets adopted from the more than 4,000 shelters in the U.S. fell by 20% in 2020. Pet adoptions fell from 2.8 million dog and cat adoptions in 2019 to 2.3 million in 2020—the lowest number in five years.[4]

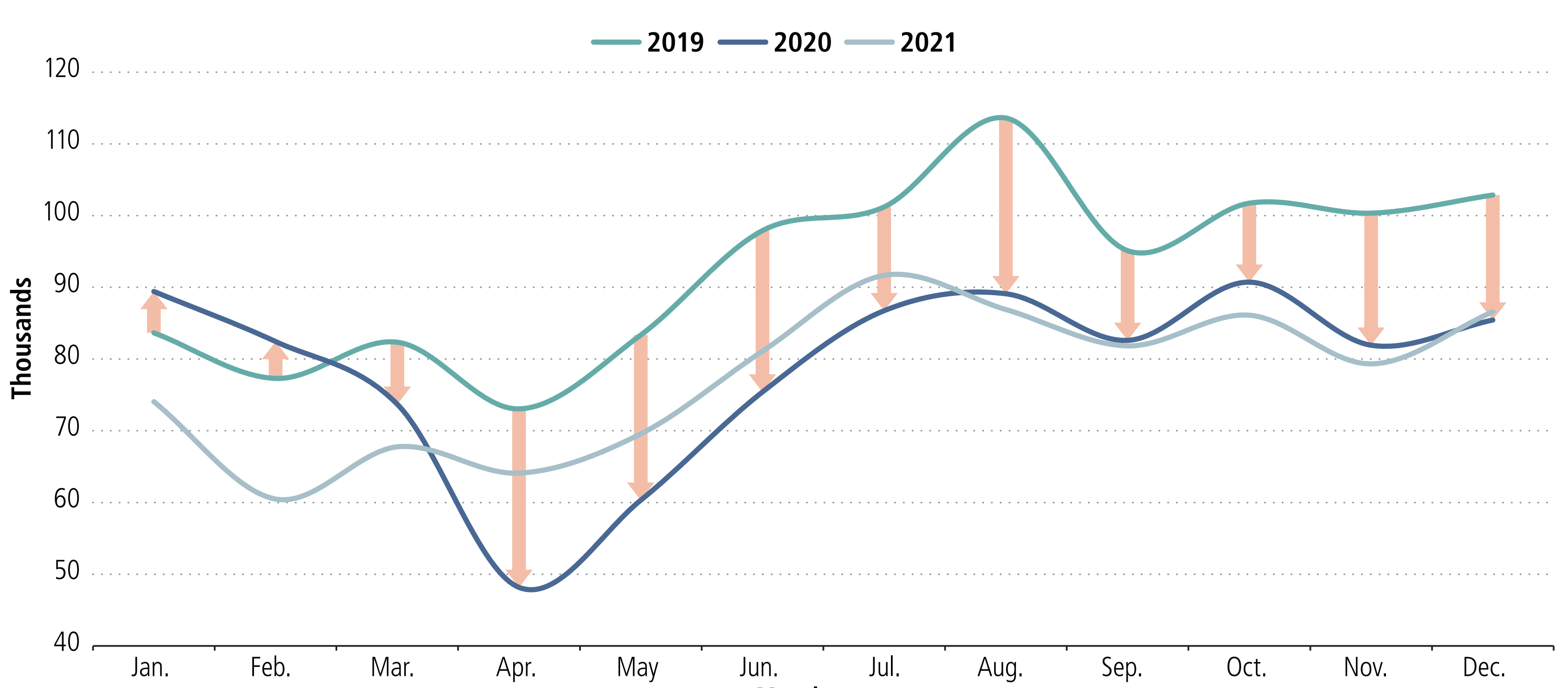
PetWatch provides more granular monthly data on a subset of ~1,200 shelters that show a significant decline compared to 2019 (*see Figure 1*), with adoptions falling sharply after the economic lockdowns began. Compared to 2019, the declines remained through 2021 as well.

CANINE CONSTRAINT: INTAKE INSUFFICIENCY

What explains the 2020 drop in adoptions? Were prospective pet owners behaving like cats, just wanting to be left alone? As it turns out, one explanation is that fewer pets were *available* at shelters. Shelters received 32% fewer dogs and 23% fewer cats in 2020, so even if you were in the market for a man's best friend, you'd have been out of luck.[5] Covid-19, instead of sparking an adoption trend, meant fewer people gave their pets away, and animal control was not as active in capturing strays. After all, the streets were empty, and there was a pandemic!

You can imagine how difficult it was to adopt a pet or do anything that required in-person contact during Covid-19. Adopting a pet on Zoom is hard when you can't play fetch. Still, we're left scratching our heads. If fewer pets are available

fig 1. WHO LET THE DOGS OUT? PET ADOPTIONS BY MONTH



Source: 24Pet Shelter Watch Report

«CAN IMAGINE HOW DIFFICULT IT WAS TO ADOPT A PET OR DO ANYTHING THAT REQUIRED IN-PERSON CONTACT DURING COVID-19.»

at shelters and adoptions are down, why can't people find a vet in 2022?

PAWSITIVE PROCRASTINATION

For those who delayed getting a haircut during Covid-19, the reopening of the economy brought overflowing barbershops, and we regretted procrastinating. Unfortunately, a similar story played out with pets.

Pet owners delayed vet visits. Sure, vets are expensive. On average, a vet visit costs $195 for dog owners and $162 for cat owners.[6] It would make sense that lower-income households might delay a visit to the vet in uncertain economic times. But, we've established that higher-income households are more likely to be pet owners. So, what was the reason for not visiting a vet during Covid-19?

Turns out, going to the vet became more of a hassle. In the AVMA survey, 37% of the respondents "delayed visiting a veterinarian due to Covid-19, and 26% of respondents reported not seeing a veterinarian in 2020 and since Covid began."[7] It's challenging to do telemedicine for a vet visit. I can't even get my cat to sit still for a photo! Thus, vets saw only "urgent cases" when veterinary practices were classified as essential businesses and allowed to remain open during the lockdown, which "created a substantial backlog in wellness visits."[8]

Putting aside "anecdata," the data backs up the impact of this procrastination with a rise in vet visits after the lockdowns ended, despite fewer adoptions during lockdowns. The average number of appointments with vets increased "6.5% between January and June 2021, compared with the same period in 2020."[9]

Some anecdotal evidence is that remote workers in lockdown "started paying more attention to their pets' daily routines."[10] No surprises here; fortunate enough to be a remote worker, your author discovered that Kitty would not drink water if it weren't fresh daily. Luckily, that did not require a vet intervention, just acceptance that she is a finicky cat. But how many pet owners noticed Fido's odd behavior and scheduled an unnecessary vet visit once lockdowns ended?

MORE VETS FOR PETS?

We have covered the demand side of the equation: fewer pet adoptions during lockdowns but concentrated, rising vet visits after lockdowns. What about the supply side of the vet market? Did all vets retire during Covid?

While the population of dogs and cats grew by 8.5 million between 2016 and 2020, bringing the total to 144 million furry friends, the population of vets increased by just 9,610 during the same period! Further, the Bureau of Labor Statistics expects the U.S. will need a 19% increase in vets![12] Of the 77,260 vets in the U.S., the median veterinarian earned $109,920 in 2021.[11] A fast-growing industry with six-figure salaries? Undoubtedly, more vets are on their way. But it will take time.

Putting aside the cost of a veterinary degree, which is well into the six figures, it takes four years of veterinary school, with a prerequisite of a bachelor's degree, to become a veterinarian. That means even if every undergraduate who graduated during the pandemic went to veterinary school, we could still see no new vets until 2025.

Despite the lousy supply chain backlog in ports, it will not take four years to clear up. Signs that this vet workforce shortage isn't easing can be found in the job openings data. Since the start of the year, job postings have come down as people have been hired to fill these positions, or their services are no longer needed. Yet, veterinary job postings remain at their same high levels since no qualified vets are available, and demand backlogs are yet to clear up *(see Figure 2)*.

NO PURRS OF PRODUCTIVITY

Any receptionist at a vet office is familiar with the oft-asked question, "Can't you just squeeze me in!?" After all, pet owners are willing to pay up for service—veterinary care ranked as the highest spending line item for dog owners and was second only to food for cat owners.

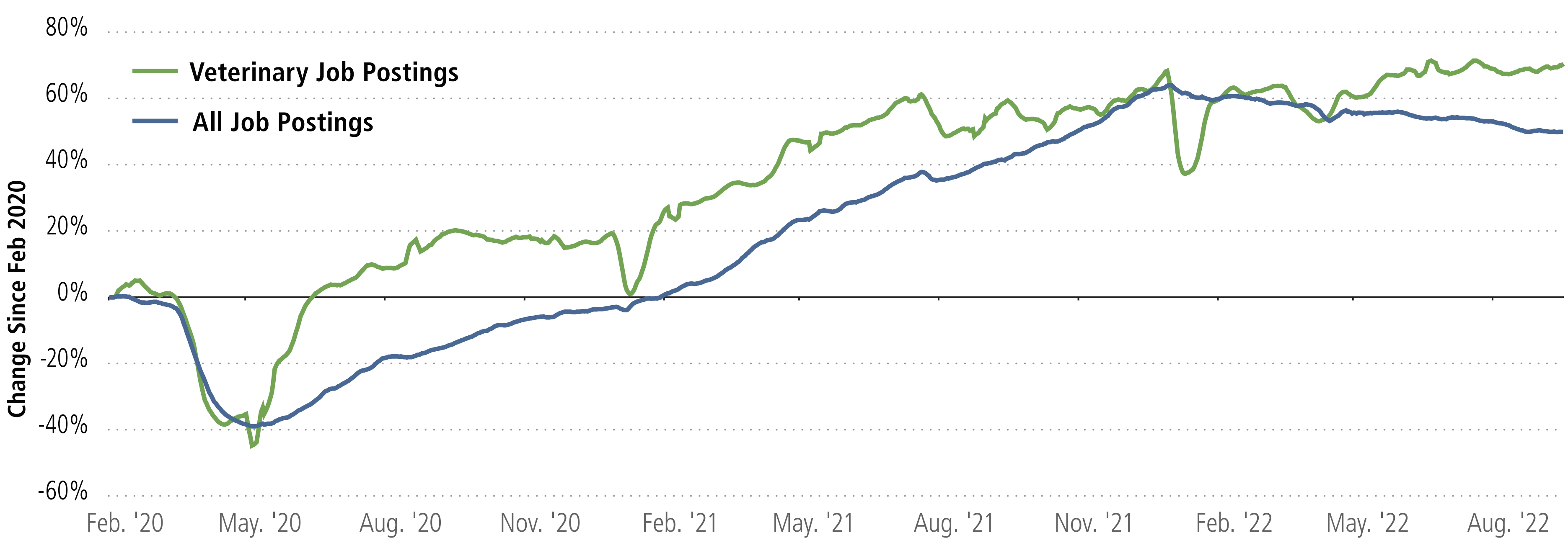
AVMA surveyed veterinarians and veterinary practice owners and learned that vets' average productivity fell around 25% in 2020 compared to the previous year. In other words, in an 8-hour day, if vets used to see 32 pets, now they only see 24. So, had lockdown laziness gripped vets?!

If you have visited the doctor or undergone a medical procedure during the pandemic and even after the reopening, you must know that it takes longer. Staff turnover and Covid-19 protocols were a big problem for all types of medical practices, regardless of whether the patients have a tail. Vets dealt with those issues, too. Telemedicine is hard to do with pets; just think how difficult it is for you to take a photo of your dog! Vets adapted to curbside care, which would understandably take longer.

Covid-19 protocols split "staff members into rotating teams," and "sanitizing examination rooms and other surfaces throughout the clinic between visits" clogged up the daily schedule.[13] Veterinary technicians, the equivalent of nurse practitioners for vets, also struggled with various issues due to the pandemic, which probably impacted their productivity *(see Figure 3 on page 10)*. What's the good news? Most of the respondents had problems with pet *owners*, not pets![14]

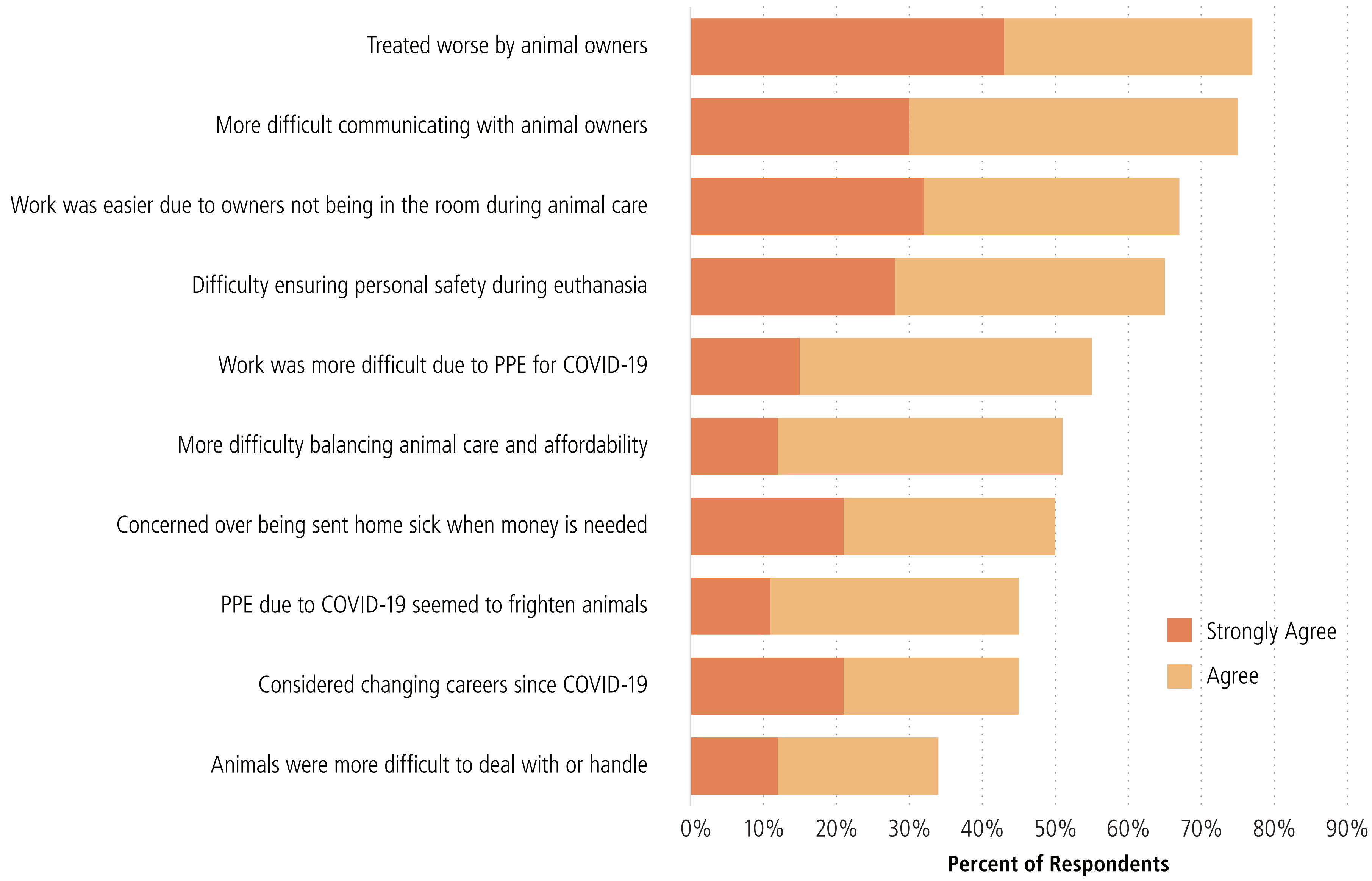
The issues and the burnout exacerbated staff shortages, a problem for many businesses, but

fig 2. DOGGED DEMAND: CHANGE IN INDEED JOB POSTINGS FOR VETS AND THE OVERALL LABOR MARKET



Source: Indeed

fig 3. COVID-19 CHALLENGES COMPOUNDED: VETERINARY TECHNICIANS' PERCEPTIONS OF THEIR ROUTINE, WORK-SPECIFIC EXPERIENCES DURING COVID-19.



Source: Rowe, Z. C., Drewery, M. L., Anderson, R. G., & Russo, C. M. (2022)

«COVID-19 PROTOCOLS SPLIT "STAFF MEMBERS INTO ROTATING TEAMS," AND "SANITIZING EXAMINATION ROOMS AND OTHER SURFACES THROUGHOUT THE CLINIC BETWEEN VISITS" CLOGGED UP THE DAILY SCHEDULE.»

it was worse in the veterinary world. According to the National Healthcare retention report, veterinary technicians have turnover rates breaching 25%, while vets breach 15%. Compare that to registered nurses with turnover rates below 20% and physician turnover rates around 7%. When turnover is high, you must continually train new hires, impacting productivity even more.

KITTY'S MOODS FLUCTUATE

So, does a vet shortage plague the economy? Perhaps, but not for the reasons most people think. Instead of a Covid-driven pet-adoption boom, the pet economy has experienced a mismatch of supply and demand. Pet owners collectively delayed vet visits and flooded in all at once with newly discovered pet maladies. Worse, vets, already in short supply, suffered from a productivity slump due mainly to the pandemic. Like with "pilot shortages" and perhaps many other economic issues, the reality is more complicated and not so easily fixed. After all, as with vets, training new pilots takes time. You wouldn't trust a hastily trained pilot to respond to the demand surge. Would you trust someone to treat your furry friend without training?

While puppy play dates are happening again, as we are back in offices away from our furry friends, the economy will take time to heal. What other areas of the economy suffer from similar issues?

ENDNOTES

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U.S. DOMICILED MUTUAL FUNDS

CASH BALANCE
Payden/Kravitz Cash Balance Plan Fund

EQUITY
Payden Equity Income Fund

GLOBAL FIXED INCOME
Payden Emerging Markets Bond Fund
Payden Emerging Markets Corporate Bond Fund
Payden Emerging Markets Local Bond Fund
Payden Global Fixed Income Fund
Payden Global Low Duration Fund

TAX-EXEMPT INCOME
Payden California Municipal Social Impact Fund

U.S. FIXED INCOME
Payden Absolute Return Bond Fund
Payden Cash Reserves Money Market Fund
Payden Core Bond Fund
Payden Corporate Bond Fund
Payden Floating Rate Fund
Payden GNMA Fund
Payden High Income Fund
Payden Limited Maturity Fund
Payden Low Duration Fund
Payden Securitized Income Fund
Payden Strategic Income Fund
Payden U.S. Government Fund

DUBLIN DOMICILED UCITS FUNDS

EQUITY
Payden Global Equity Income Fund

LIQUIDITY FUNDS
Payden Sterling Reserve Fund
Payden U.S. Dollar Liquidity Fund

INDEX FUND
Payden Global Government Bond Index Fund

FIXED INCOME
Payden Absolute Return Bond Fund
Payden Global Aggregate Bond Fund
Payden Global Bond Fund
Payden Global Emerging Markets Bond Fund
Payden Global Emerging Markets Bond Fund (Hard Currency)
Payden Global High Yield Bond Fund
Payden Global Inflation-Linked Bond Fund
Payden Global Short Bond Fund
Payden U.S. Core Bond Fund
Payden USD Low Duration Credit Fund

DUBLIN DOMICILED AIF ICAV FUNDS

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