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Box Checker, Inc.

The Federal Reserve's balance sheet and the *Federal Register* went on a parallel growth spurt after the subprime crisis. Assets and liabilities, rules and regulations proliferated. Now in progress is a review of the consequences of this burst of governmental busyness. Up first is a survey of the housing market. Next comes an overview of mortgage finance, including a revisit to our friends, the mortgage REITs. After which follows an analysis of Ellie Mae, Inc. (ELLI on the Big Board), a thriving vendor of mortgage-origination software; we judge that Ellie is poised to thrive less.

January marked the completion of the bubble-era round trip in home prices, by which we mean the prices of previously lived-in single-family homes, the ones known as "existing" homes, to distinguish them from the "new" homes that somehow, presumably, don't exist. Those prices are right back where they started from after their 35% plunge from 2006 to 2012. Perhaps the Fed's purchase of \$1.8 trillion of mortgage-backed securities had something to do with the snapback. From 6½% in July 2008, the 30-year fixed-rate mortgage fell to an all-time low of 3.32% in September 2016.

You could almost hear the country exhale. Since late in 2009, the proportion of mortgagors suffering negative equity has declined to 4.9% from 26%, according to CoreLogic. In the fourth quarter of 2007, mortgage-debt service absorbed 7.2% of the average household's disposable income; now it takes just 4.4%.

And here come the millennials. People born between 1980 and 2000 constitute the largest age group in America, according to Goldman Sachs. There are

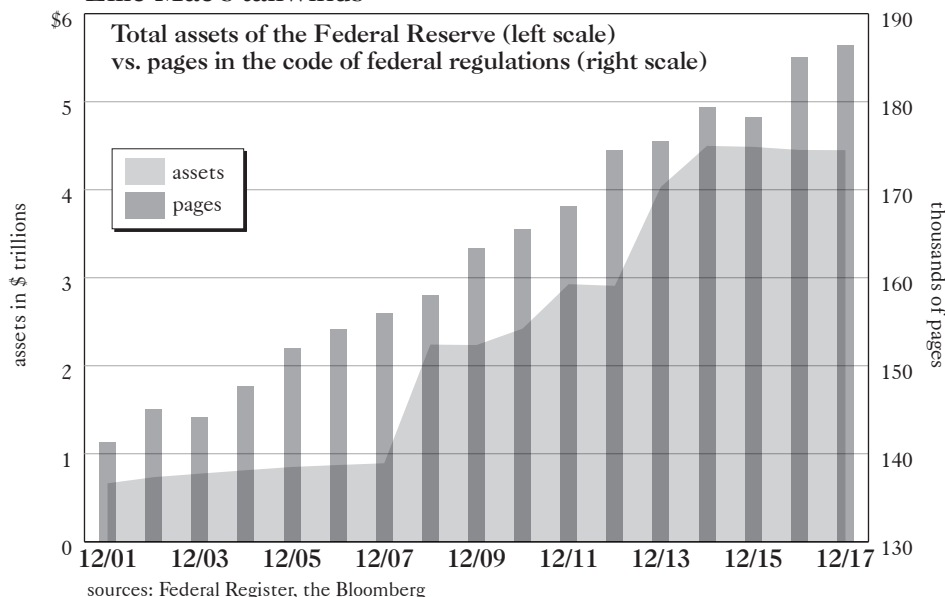
92 million of them, surpassing the 77 million baby boomers, and they're moving out of their parents' basement. "If you look at the millennial cohort, the largest number of individuals is 25–26 years old," Michael Fratantoni, the chief economist of the Mortgage Bankers Association (MBA), tells Deputy Editor Evan Lorenz. "That is just the point at which most folks are going out on their own and forming households. Peak first-time homebuyers is when individuals get to 30 to 31 years old. What that says to us is, we have a five- to seven-year time frame where there is a wave of people hitting the housing market. There is going to be a tremendous amount of housing demand."

But not enough supply, especially affordable supply, reckons Marvin Shapiro,

chief executive of Avanti Properties Group. It's an informed judgment, as Avanti invests in land suitable for homebuilding. "We calculate demand mainly by adding household formation to second-home demand and obsolescence," says Shapiro. "Our number today is 1.6 million to 1.7 million units annually, including rentals. We are building 1.1 million to 1.2 million, up from the recession but short of need. That is a big gap that has persisted for a long time. There is a lot of pent-up demand, mainly on the affordable end of the market where supply shortages are acute. We think it is inevitable that this gap eventually narrows, leading to more housing starts over the next several years."

The Fed should know that its asset-price-lifting drive has succeeded almost

Ellie Mae's tailwinds



too well. Thus, in 2016 and 2017, house prices rose by 5.4% and 6.3%, double (or more than double) the 2.7% annual increase in average hourly earnings. And at the low, entry-level end of the market, the supply-demand imbalance is worse. Thus, in the first quarter of this year, according to the property website Trulia, listings for beginner-level homes actually fell by 14.2%, while the median list price of those dwelling places climbed by 9.6%, far surpassing the 7.5% and 5.2% jumps in “trade-up” and premium-priced houses, respectively.

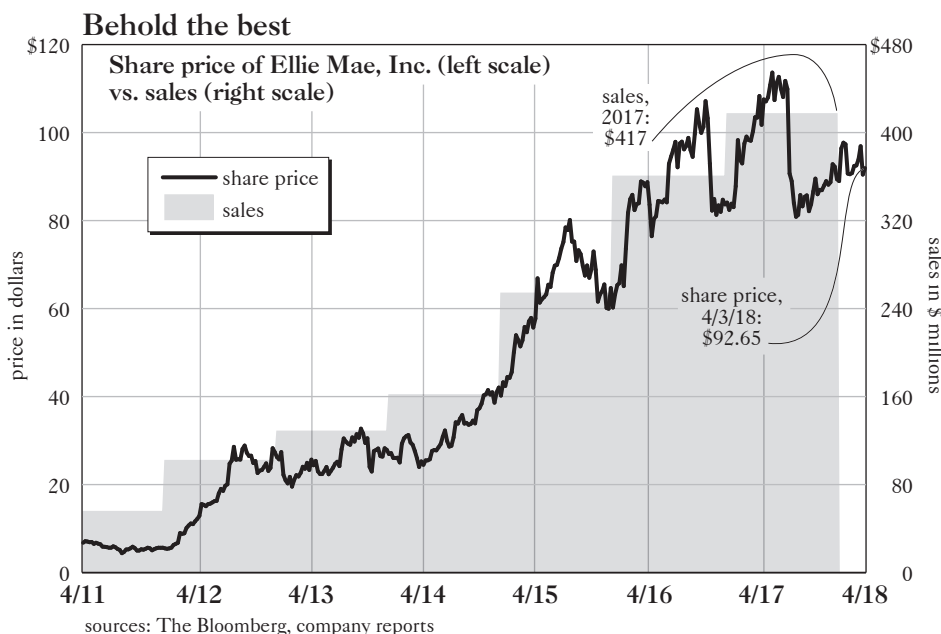
Shortages don't persist in a well-tempered market economy. In the imperfectly tempered American economy, builders face continuing constraints. “Now that demand has picked up, they are struggling to build up to pace,” Fratanoni tells Lorenz. “They are struggling with respect to hiring. We are seeing construction wages rise faster than overall wages. The number of unfilled construction jobs is near all-time highs and rising. We are seeing input costs rise: lumber up 50% over the last 14 months.” Then, too, land prices, like house prices and stock prices, have taken flight. Is now a good time to buy a house? In December 2014, 83% of respondents answered “yes” to that question, posed by poll-takers at the University of Michigan. In January of this year, only 67% so replied.

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Mortgage real-estate investment trusts generate interest income by harnessing the power of a positively sloped yield curve. That is, they borrow short and lend long. “Lending,” in this case, means investing in residential mortgage-backed securities. “Borrowing” means financing those assets. The difference between the cost of the financing, typically, via repurchase agreements, and the yield on the MBS is the source of the dividend checks that arrive in the stockholders' mail.

It's not as easy as it sounds, because mortgagors, the ingrates, have the right to prepay as they please. Thus, the mortgagees—i.e., the mortgage REITs—are forever at risk. Let interest rates fall, and homeowners rush to refinance high-yielding paper for lower-yielding paper. Let rates rise, and the refis stop. In the first case, the REITs lose the assets they want to keep. In the second, they keep the assets they want to lose.

Because, since the waning days of September 2016, the 30-year mortgage rate



has increased to 4.3% from 3.32%, almost everyone who could finance at lower rates has already done so. Thus, the MBA projects that refinancings will decline by 56% between 2016 and 2018. If so, refis will drop to 27% of total mortgage originations this year, the lowest share since 1995.

It's been a tough row to hoe for the mortgage REITs. Rising yields—falling mortgage prices—have taken their toll on the REITs' book value. “Then,” Douglas Harter, who covers mortgage REITs for Credit Suisse, tells Lorenz, “as you go through the year, the impact of rising short-term rates will hit the dividends. You saw CYS Investments, Inc. and Capstead Mortgage Corp. cut their dividends already this year. I think as you get to the back half of the year, you see more dividend cuts coming.”

Last fall, *Grant's* sized up three mortgage REITs: AGNC Investment Corp. (AGNC on the Nasdaq), Annaly Capital Management, Inc. (NLY on the Big Board) and Capstead Mortgage Corp. (CMO on the New York Stock Exchange). We had bullish things to say about the trio's preferred stock, which commands payment priority over the corresponding common ([Grant's, Oct. 6, 2017](#)). Since then, the three common issues have declined by an average of 12% while the preferreds have fallen by an average of just 1% while delivering yields of between 7% and 7.6%.

You can think of the Federal Reserve as a kind of governmental mortgage REIT—a hyper-leveraged REIT. The Fed balances its \$4.4 trillion of assets on \$39.2 billion of equity. Any private finan-

cial institution so structured would be broke in a nonce. Fortunately (perhaps), the government's REIT is under no obligation to mark its portfolio to market, though it's not entirely protected from rising interest rates.

In October, the Yellen Fed started to shrink its holdings of MBS and related mortgage assets by as much as \$4 billion a month, which pace the Powell Fed intends to accelerate to as much as \$20 billion a month by October. The targets are not really targets but caps. And to shrink, the Fed does not sell but rather refrains from reinvesting in new assets as the old ones get paid down or refinanced. So far, the central bank is more or less on schedule: Its mortgage holdings have run off by \$39.2 billion, slightly above the projected decline of \$36 billion.

The Fed can project all it likes, of course, but Mr. Market disposes of the pace of mortgage refinancings. If refis take their expected tumble, Powell et al. may be stuck with their MBS for longer than they prefer. In such a case, the pace of balance-sheet reduction—“QT,” for quantitative tightening, as we adepts call it—could likewise prove drawn-out.

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Fewer refis are one cross which the mortgage-underwriting business has to bear. The onslaught of post-2008 regulation is another. Nowadays—what with robo-signing and phony appraisals in bad odor and heavy new regulations in place—it costs an average of \$8,475 to underwrite a mortgage, the MBA estimates, up from \$3,416 in 2007.

The decline in profitability will weigh on not only the lenders but also their vendors. Ellie Mae is the largest provider of loan-origination systems (LOS) to the mortgage industry (the name is said to be a riff by the founder's son, rather than on the names of the disgraced federal-government-sponsored enterprises). At year-end, Ellie says, around 184,000 mortgage professionals used Encompass, the company's main software platform. Last year, Encompass closed more than 2.5 million mortgage loans, just over one-third of all mortgages originated in the United States.

The system manages the workflow of mortgage brokers and that of the compliance staff who look over the brokers' shoulders. If a loan officer needs to order an appraisal or secure mortgage insurance for a borrower, Encompass can make it happen. Ellie charges a fee, of course, as it does for other add-on services, such as internet marketing and lead-gathering.

Beyond regulatory box-checking, LOS is intended to hasten the process of underwriting. To capture for itself some of the savings that automation achieves, Ellie uses a hybrid pricing model: besides a base user fee, it charges a so-called success-based pricing fee to the client who issues more than a certain number of mortgages. In 2017, 32% of the \$417 million in top-line revenues were traceable to success-based pricing and to third-party services purchased on Encompass; the balance stemmed from user fees.

Perhaps no company has capitalized so well on the post-crisis regulatory crack-down as Ellie. Beset by Dodd-Frank, the Consumer Financial Protection Bureau and new state regulations, most small-bank and nonbank lenders lacked the resources to build their own internal systems to comply with the thousands of pages of fresh directives. LOS filled a crying need.

Then, too, the too-big-to-fail banks have retreated from the many corners of the mortgage market they once occupied, e.g. Federal Housing Administration-insured loans, which cost them so dearly in post-bubble legal and regulatory settlements. According to Home Mortgage Disclosure Act data, the non-bank share of mortgage originations increased to 51% in 2016 from 26% in 2011. Many of these non-banks were the smaller lenders for which LOS was a natural fit.

Encompass is hosted on servers run by Ellie Mae; clients access the product via a web browser. Thus, there is no lengthy

installation process and Ellie can quickly accommodate a large number of eager—generally smaller—new users. Black Knight, Inc. (BKI on the NYSE), the dominant provider of mortgage-servicing software, takes a different approach. Its Empower LOS mainly serves big lenders. Empower Now!, a LOS focused on smaller lenders, debuted only in March 2017.

You'll hear no complaints from either company about the dead hand of mortgage regulation. Ellie managed to compound its revenue growth at an annual rate of 38% between 2010 and 2017. Since their public-equity debut, at \$6 per share, in April 2011, Ellie's shares have zoomed to \$92.65, or by a cool 1,444%. "When you look at the market today, the reality is the mortgage process is so complex, so the need for an all-encompassing LOS like ours is stronger than ever," Alex Hughes, vice-president of investor relations at Ellie, tells Lorenz. "There is no change in the regulations that would change that. The reality is, any [reduction in] regulation on the federal level is more than offset at the state level as states like Connecticut and California fill in the gap."

At March 20 analyst-day festivities, management said that Ellie will be able to compound revenues by 20% a year through at least 2023. It would be no small feat if it did. As it is, Ellie owns a 35% share of all mortgages underwritten in the United States. To get where it wants to go, the company must wind up with a 50% to 55% share, winning an extra 2% to 4% every year until 2024. Price increases—taking the toll per loan to \$250 or so by 2024 from \$165 in 2017—and the sale of additional services figure into the grand plan.

And you may add to the Ellie Mae bull case a squeaky-clean balance sheet. The Dec. 31, 2017 balance sheet showed a cash balance of \$241 million and no debt.

Count some skeptical concerning the growth strategy, ourselves among them. "The last several years were a perfect environment in the sense of there was a massive demand from people needing the technology that ELLI had ready in place and they were able to install it," Vincent Curotto, an analyst at asset manager Algebris Investments, which is short Ellie Mae, tells Lorenz. "Our thesis is that . . . their ability to gain market share is slowing down because everyone has gone through that process and there are no more tailwinds going forward."

In fact, year-over-year revenue growth has been decelerating: to 16% in 2017,

from 42% and 57% in 2016 and 2015. A 12% year-over-year decline in non-contracted revenues was the source of last year's slowdown, a dollop of molasses that will continue to stick in 2018 according to MBA projections. Mortgage lending is, after all, a cyclical business, and a big wave of refis propped up the 2015 and 2016 results.

"Despite the 'pitch' that lenders would need to move off of proprietary systems to third-party solutions, the [2017 Stratmor Group] survey does not show that has occurred," Chris Gamaitoni, assistant director of research at Compass Point Research & Trading LLC and who rates Ellie a sell, advised his clients in January. "Proprietary Systems only lost 0.7% of market share. Likely this indicates that these systems are engrained and there is a lot of institutional pushback in moving to a third-party solution. Keep in mind, companies with proprietary systems were required to make a significant investment to support [the CFPB's] new TRID rules. 'Writing off' those investment dollars shortly after implementation would seem difficult to justify to corporate management."

Megabanks and smaller lenders not covered by a third-party LOS account for a quarter and a third of total originations, respectively, relates long-time subscriber Kevin Kaczmarek, head of data analytics at Zelman & Associates LLC and who rates Ellie Mae a sell.

"With the big lenders—that top quarter—the Black Knight team is better positioned, especially given that it won Citibank as a client," Kaczmarek continues. (Jan. 8 was that red-letter day.) "Big lenders need a reason to not go with Black Knight because Citi did. While Citi is not that big a mortgage lender anymore, they are a big, complicated bank. That's kind of the big factor there. Their IT systems are immensely complicated. The big lenders we've talked to have more faith in the Black Knight's team to go in and do an implementation of that level of size and complexity vs. Ellie Mae, which they haven't expressed as much faith in."

It's the way of the world that Ellie Mae's success has attracted imitators. We've mentioned Black Knight's Empower Now! Based on Gamaitoni's number-crunching, LOS competitors D+H Mortgagebot LLC and MeridianLink, Inc. each won more market share than Ellie Mae did in 2017.

Upstarts Blend and Roostify, Inc. are likewise in the mix. "Those are applications that have gained a lot of

traction,” Kaczmarek says. “They allow a consumer to submit an application, upload all of their documents and just streamline everything. That is attractive to the millennial borrower which is a huge part of the housing market. That cuts into the LOS economics. A Blend or a Roostify will charge \$60 to \$80 or more per loan and that compares to the \$165 per origination that Ellie is getting.”

“Then, too,” Lorenz observes, “despite the supposedly large opportunity in the residential-mortgage software market, Ellie has been talking about going into other loan categories. At the Feb. 26 JMP Technology Conference, CFO Matthew LaVay broached a pos-

sible entry into the software market for commercial real-estate loans. Nor should it gladden the bulls that Ellie Mae has served notice that it will cease giving quarterly updates on the number of new users signed onto Encompass.

“Non-GAAP adjustments to income present another source of analytical discomfort,” Lorenz proceeds. “Ellie Mae and its compliant analysts remove stock-based compensation from the adjusted numbers. Stock comp, however, is a major line item. Insiders gave themselves \$34.5 million worth of equity-based pay last year, a figure amounting to 8% of sales and 59% of adjusted earnings. Nor, trading at 56.5 trailing adjusted earnings, is Ellie Mae exactly cheap.”

The Street’s verdict is nine buys, four holds and two sells. For 2018, analysts project 20% top-line growth, which matches management’s Feb. 8 advice. All this presupposes accelerating comps, as guidance for the first quarter implies year-over-year growth of 16%.

A short interest equal to 11.6% of the float suggests that the bears are more closely in sync with the management’s innermost thoughts than are the analysts. ELLI insiders, regular sellers, dumped 100,849 shares, worth \$9.2 million, in the first three months of 2018 alone. The stock is liquid, and the cost to borrow it is no more than the general collateral rate.

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