DIGITAL LENDING
The 100 billion dollar question
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Introduction

DIGITAL LENDING IS HERE TO STAY

Technology is changing how people travel, shop, eat, and conduct financial services. A new generation of companies is attacking banks across lending and spending. Digital Lending has already taken off, but we expect it could double again before 2020, reaching $100bn in loan origination volumes combining the United States and Europe.

BUT THE LANDSCAPE IS CHANGING

Digital lending exploded in 2015, and 2016 will be the year of consolidation and expansion. A few smaller entrants may cease to exist or be acquired, big banks will enter, and existing lenders will expand into new verticals. Our rationale for consolidation is that digital lenders look more like lenders as opposed to technology marketplaces.

BUILDING LIFETIME VALUE OVER EXCESS VALUE

As the digital lending environment becomes more competitive, platforms that retain and satisfy customers are best positioned. Originations alone, without a balance sheet, is not inherently a recurring revenue business. We are most in favor of digital lenders that plan to evolve the business model to serve customers across a full suite of financial services.
We estimate a $2 trillion addressable market in the US and Europe. At $100bn in volume, digital lenders could have a 10% market share by 2020\textsuperscript{1}.

\textit{Source: Autonomous Research.} \textsuperscript{1}Assumes a 2-year average loan duration.
SECTION 1

Digital Lending
How we got here
The Definition of Digital Lending

Digital lenders go by many names: Marketplaces, Peer-2-Peer, Online Lenders.

There are a few common characteristics that differentiate a digital lender from a traditional bank.

No Branches
A fully digital customer experience for processing and servicing loans online results in a better customer experience. Like banks, though, lenders compete heavily online and offline for borrowers.

More Data
Lenders still rely heavily on FICO to build credit models. But, other data sets and heuristics can color the underwriting process for less seasoned borrowers, and help lenders outperform on credit if used well.

The New Middle Man
Digital lenders set the price of the loans (the interest rate), service the loan (collect), and find parties interested in investing in the loans. They typically charge a fee on originations.
Digital Lenders Coming of Age

There are a number of other nuances to the digital lending model. The most notable is how funding and origination work. Today some lenders sell loans to individuals, most sell to institutions, and many keep loans on the balance sheet. A history lesson helps.

**THE PEER-TO-PEER BOOM.** Zopa in Britain, then Prosper, and Lending Club in the US open “peer-2-peer” lending websites whereby individual investors fund loans for other individuals, relying on the platform provider to price and service.

**2005 - 2008**

**2009 - 2011**

**THE REBUILD.** Peer-to-peer lenders take a bit of a pause post the financial crisis to institutionalize their underwriting and servicing procedures. A major win is approval from the SEC to register the partial loans sold as notes.

**RISE OF THE MARKETPLACE.** With venture capital funding on the rise, digital lenders seek out institutional capital to scale their underwriting models quickly. Institutional asset managers begin buying fractional loans and then begin purchasing whole loans direct from the platform.

**2012 - 2013**

**2014 - 2016**

**COMPETITION.** The number of platforms ramps from a handful to hundreds, and many lenders without track records use equity and debt financing to put loans on their own balance sheet. Securitizations and bank partnerships increase the institutional buyers’ level of sophistication.
**Banks Left the Door Wide Open**

**Banks are making more but lending less, creating an attractive opportunity for new entrants.** The excess lending spread earned by banks has not necessarily meant better customer experiences or shiny new web interfaces. New digital lending startups have attacked the areas where banks are most vulnerable, making credit cheaper and easier. Examples of the lack of supply and mis-priced risk include:

- Today, digital lenders provide a meaningful amount of debt consolidation funding (representing 85% of digital lenders’ consumer originations). Digital lenders offer yields that are on average 7% below credit cards.
- Small business loans are hard to come by. The Federal Reserve estimates unmet small business loan credit demand in the hundreds of billions.

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**Customers are paying higher prices**

Savings rate versus borrowing rates at banks

**And supply has been reduced**

Consumer loans on bank balance sheets

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Source: Federal Reserve, Autonomous Research. ¹Spike in balance sheet assets reflects consolidation of credit card trusts on balance sheet following an accounting change.
Digital Lenders are Taking Advantage

Simply put, banks have mispriced consumer credit risk. The level of divergence in credit card rates between the highest quality borrowers and the lowest quality ones is too narrow to differentiate between the best and worst credits. As such, digital lenders can better match a loan rate with an individual borrower. For investors, the yields are still enticing in today's low interest rate environment. This has created an abundant supply of investor capital. Of course, today's economic environment is an important variable and curiosity exists on how lenders will fare when credit losses tick up or interest rates rise a few percent.

Credit risk is priced tight on cards
High and low credit card interest rates versus digital lenders

Digital lender yields outpace bonds
Yield

Source: Bloomberg, Autonomous Research

*Based on the lowest and highest rates from the top 5 digital lenders by volume.
Attracting a Massive Number of Entrants

In 2006 there were 2 countries with digital lenders

Now there are 67 countries with digital lenders

We estimate over 2,000 players globally

And over 200 in the US

And...Digital lenders are not only focused on personal loans.
Digital Lending Products are Booming

There are digital lenders with solutions for:

- Personal Loans
- Student Loan Refinance
- Mortgage
- Fix and Flip Home Lending
- Sub-prime and Pay Day Lending
- Auto
- Point-of-Sale Medical Finance
- Small Business Term Loans
- Small Business Cash Advances, Factoring, and Lines of Credit

GLOBAL NUMBER OF DIGITAL LENDERS

Source: Orchard Platform, Lend Academy, Autonomous Research
A Trillion Dollar Opportunity for Digital Lenders in the US

There are $4 trillion in outstanding consumer loans in the US.

Not all is available to digital lenders.

The following lending products are most relevant to digital lenders creating an addressable consumer opportunity of $500bn.

- **STUDENT**: $200-$300bn mispriced by federal government, meaning borrowers could qualify for a lower rate.
- **AUTO**: ~$100bn in prime and near-prime auto from non-banks.
- **PERSONAL LOANS**: ~$150bn in non-subprime credit card balances over $10,000 where the borrower has the cash flow to move to a three or five year amortizing loan.

Additionally, the US Federal Reserve Bank of NY estimates that there is unmet credit demand of ~$100bn, resulting from banks’ unwillingness to make small-dollar loans. Technology-led digital lenders are garnering interest in their ability to partner with banks in order to meet the untapped demand.

There are $310bn in sub-$1mn loans to small businesses.

An additional $100bn in demand exists.

Source: Orchard Platform, Lend Academy, US SBA, FDIC, Company Data, Autonomous
Plus another $1 trillion in Europe

We estimate the UK addressable market is $260bn. We ignore the $109bn student loan market, as the current 1.5% interest rate on loans looks too low to entice digital lenders’ attention.

In Continental Europe we estimate a $500bn addressable market. The European digital lending market is in a very early stage of development, issuing just $1bn of loans in 2015. Given the nascent stage Auto loans are outside the addressable market today.

We estimate there are $220bn of loans to small businesses in Europe, where platforms such as UK-based FundingCircle have been successful across four European countries.

As in the US many of the smaller SMEs would not have access to bank finance, and hence the overall market opportunity could be greater.

Source: ECB, EBA, SLC, Bank of England, Eurofinans.org, Bain, Autonomous
SECTION 2

Marketplace or Lender?
A framework to evaluate digital lending’s future
Marketplace or Lender?

Digital lenders argue that their approach to lending has the ability to change the banking system as we know it. We explore the following four areas to decide how disruptive the new lenders could become.

- **Products**
  Lending hasn’t changed since 1400

- **Technology**
  A better customer experience

- **Networks**
  One to many, not “many-to-many”

- **Regulation**
  Unavoidable
Consumer Products

There are many products distributed by digital lenders – the two core products are personal loans, primarily used to consolidate credit card debt, and small business term loans.

For **personal loans** the product is very similar to those sold by traditional banks like Discover and Capital One.

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>LENDING CLUB</th>
<th>DISCOVER</th>
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<tr>
<td><strong>Balances</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Outstandings</td>
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<td>$7.7bn</td>
<td>$5.4bn</td>
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<tr>
<td>YoY Growth</td>
<td></td>
<td>95%</td>
<td>12%</td>
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<tr>
<td><strong>Credit</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Delinquency Rate</td>
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<td>1.4%</td>
<td>0.8%</td>
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<tr>
<td>Net Charge Off Ratio</td>
<td></td>
<td>3.4%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Average FICO Score</td>
<td></td>
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<td>750</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield</td>
<td></td>
<td>13.0%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Term</td>
<td></td>
<td>3 to 5 years</td>
<td>3 to 5 years</td>
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<tr>
<td>Origination Charges</td>
<td></td>
<td>2% to 5%</td>
<td>0%</td>
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</tbody>
</table>

*Source: Company Data, Autonomous Research*

If a product is a commodity, are the new digital lenders all that different from their traditional counterparts?
Small Business Products

For small business loans, the product design typically carries higher interest rates than bank loans to compensate for the underwriters’ speed and approval rates.

However, as data collection methods improve, small business digital lenders are offering products that are more competitive with banks’, while also increasing the loan sizes to up to $1mn. The products are now looking quite similar, but banks have yet to figure out how to economically underwrite small-dollar unsecured loans to small business. Early signs are that new digital lenders can add value to the small-business lending process. Chase recently cried “uncle” in a partnership with OnDeck.

Small business loans from digital lenders can be more expensive than the bank to offset the risk of broader acceptance.

Source: NY Fed, Company Data, Autonomous Research
Banks do not have the best reputation when it comes to innovation. Digital lenders create a competitive edge by using technology to their advantage. Comparing banks’ operating expenses to Lending Club’s highlights the differences.

While an expense ratio comparison is not entirely fair to the banks, digital lenders are clearly using technology to their advantage, similar to other online disruptors. But from a competitive angle, the barriers to building this technological advantage do not appear to be reserved for only a few.

Technology

Digital Lending technology is purpose-built, streamlined, and “it” puts pressure on banks.
Networks

One of the potentially disruptive elements of digital lenders is the marketplace concept, whereby a digital lender finds a customer and then matches the loan directly with an investor. Marketplaces are wonderful businesses to invest in. They usually break the “many to many” problem by connecting parties where individual relationships would be too complex. They also set rules and standards to make the network work. The costs of recreating these networks keep competitors at bay. A perfect example is Visa and MasterCard.

However, in the case of digital lenders, they may not really be marketplaces.

1. On the borrower side, the recurring usage of lending is small. Therefore borrowers may shop across many vendors when looking for a loan product.

2. Capital is also readily available. Services exist to connect capital providers with multiple lenders, so the many-to-many problem does not really need solving.
Regulation

Digital lenders operate in a regulated financial services industry, but many do not need to follow the same morass of regulatory procedures as a deposit-taking institution.

That said there are a number of legal and regulatory rules that are impacting digital lenders in the US. For example, the US Treasury is researching the industry, the House Financial Services Committee is asking questions, recent Court cases (Madden v. Midland) call into question the business model of non-bank interstate lending, and other questions around risk retention loom on the horizon. Ultimately, the regulatory burden makes digital lenders look a lot more like a lender than a high-flying technology marketplace. In the UK the regulatory regime for digital lenders has been supportive thus far.

LOAN PROCESS

Digital lenders follow the same rules of the road as banks when dealing with consumers:
• Unfair, deceptive or abusive, acts or practices (UDAAP)
• Truth in Lending Act (TILA)
• Fair Credit Reporting Act
• Service Members Relief Act
• Anti-Money Laundering and Know Your Client

The majority of digital lenders don’t take deposits, don’t have state lending licenses, nor are they chartered banks. Therefore, the digital lender cannot technically issue the loan. Instead a third-party bank issues the loan on behalf of the digital lender, who then buys the loan from the banks a few days later.

Digital lenders must comply with the same collection procedures as any bank or operating company.
Eight years after digital lenders first started making loans we would expect the industry to be dominated by a few players, and in terms of volume this largely holds true. However, digital lenders have low barriers to entry, in our opinion, which fosters competition.

While barriers to entry are low, scale does improve credit model efficacy, allowing larger digital lenders to offer lower rates in many circumstances versus peers. Unfortunately, newer entrants may still choose to compete with these rates despite having had less time to test their credit models. In the current credit environment, competition will remain high. When the tide goes out, platforms will be separated into the haves and the have-nots.
Digital Lenders: More Lender than Marketplace

New digital lenders are lenders in disguise.
This is not to say the new crop of digitally enabled lenders will fail to take share from established banks. Overall, technology itself is a powerful tool in creating a better customer experience when banks’ customer relations are suffering. Net promoter scores, a measure of consumer experience, for digital lenders eclipse traditional banks’ by a wide margin.

With low barriers to entry, competition will ensue.
Consumer lending products are largely a commodity, leading to ongoing competition not only among digital lenders, but traditional lenders too. Ultimately, we expect some businesses will succeed, others will fail, and some lenders will be acquired by more traditional financial services firms. In small-business lending, more bank and digital lender partnerships will be forged.

<table>
<thead>
<tr>
<th>MARKETPLACE</th>
<th>LENDER</th>
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<tr>
<td>Products</td>
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<tr>
<td>Technology</td>
<td>✓</td>
</tr>
<tr>
<td>Networks</td>
<td>✓</td>
</tr>
<tr>
<td>Regulation</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Net Promoter Scores**

Source: Company Data, Autonomous Research.
SECTION 3

Lifetime Value
over Excess Value
Excess Value is Hard to Defend

Digital Lenders’ excess return potential will be competed away.

The power of technology can reduce lending costs, giving digital lenders an advantage. But, over time, due to low entry barriers, loan investor returns may fall and digital lender profits may normalize to returns more commensurate with long-term averages.

To combat these pressures, industry partnerships and acquisitions will emerge to better align the interests of banks and digital lenders.

Return on assets (ROA) measures the net income a lender earns on outstanding loans (assets). For a bank this is a straightforward calculation. For digital lenders, we calculate an ROA of 4% by piecing together the industry.

- Investors on the marketplace earn a return on the loans of 8%. We use a cost of funds of 3.25% based on securitization rates.
- Marketplaces like Lending Club have net revenue yields of 5% and incremental margins of 45%. Using a two year loan duration, we assume an ROA of 0.8%.

### Excess Returns May Be Difficult to Maintain

**Net Investor Return**

**Normalized Marketplace Net Profit**

**Digital Lending “ROA”**

**Personal Loan ROA**

**Bank ROA**

The promise is digital lenders can maintain excess spread of 2-3%

**Source:** Company Data, Autonomous Research. **ROA = Return on Assets**
Lifetime Value

Digital Lending is a fast-growing, attractive market that could amount to +$100bn in loans by 2020.

Competition will breed a better lending experience, and, as a collective group, digital lenders will undoubtedly change lending. In this environment, the most successful digital lenders will emphasize lifetime value over transactions.

The main driver of lower returns for digital lenders will be competition for borrowers. Reducing churn via sticky customer relationships will define success. Taking a page from traditional banks, providing consumers and small businesses with not only loans, but other financial products and services will increase usage. Digital lenders focused on lifetime value will profitably scale the upfront investment required to beat-out the competition.

Building Lifetime Value, Decreasing Churn

It’s critical that digital lenders emphasize value-added products and services over pushing a second loan product.

Source: Autonomous Research
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