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Business Litigation Trends in North Carolina

The following study prepared by Smith Anderson's business litigation team Chairs, Mike Mitchell and Christopher Smith, consists of data, research and an analysis of business litigation trends and legal trends in North Carolina from 2014 to 2018. The findings within this report correlate commercial litigation trends with select industry and market trends, and identify the impact these trends may have on North Carolina businesses statewide.

Select areas of focus include:

1. Intellectual Property
2. Toxic Torts
3. Product Liability
4. Business Court

Select industries of focus include:

1. Technology
2. Life Sciences
3. AgTech
4. Real Estate and Construction

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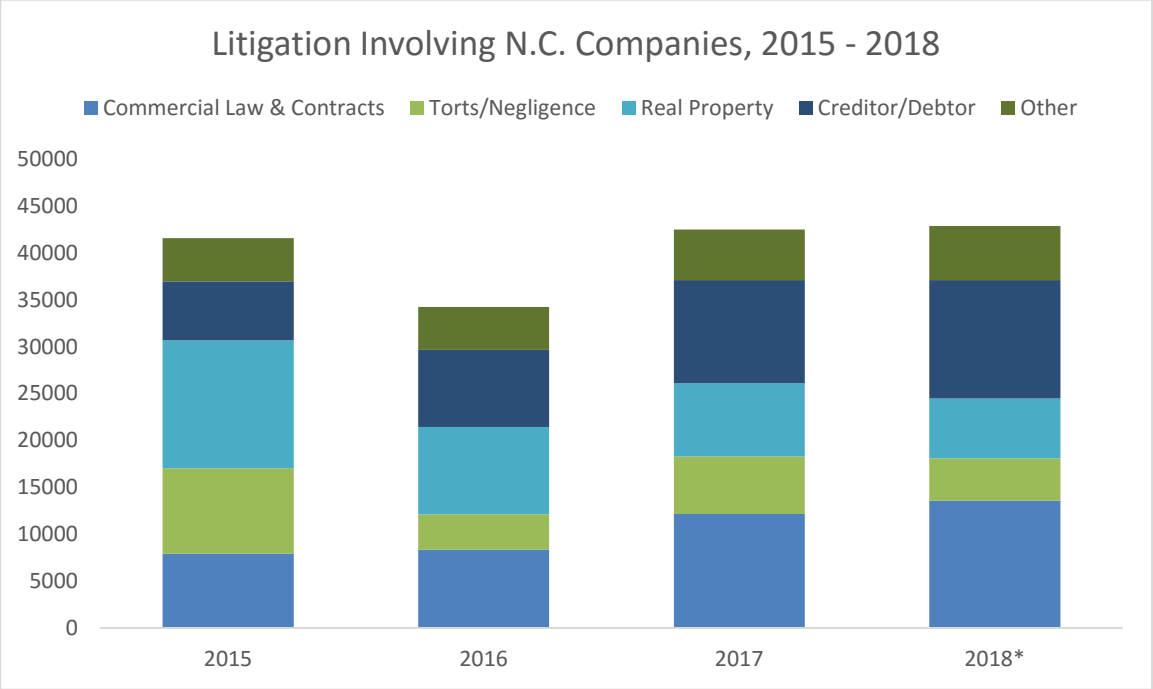
Executive Summary

- Litigation increased significantly in North Carolina in 2016 and 2017. Although the rate of litigation remained steady in 2018, the long-term trend appears to be towards less litigation – especially in civil court.
- Patent litigation is shifting towards global enforcement strategies, possibly resulting in less patent litigation nationwide. Additionally, the Supreme Court's ruling in TC Heartland v. Kraft continues to change the patent landscape, resulting in fewer cases.
- If finalized and implemented, the United States-Mexico-Canada Agreement will establish a new legal framework for intellectual property. This will be an area to follow in the near future, as it will impact litigation.
- Toxic torts litigation is inherently unpredictable, but is currently trending downward in North Carolina. Areas to follow in the future include:
    - Advances in medical science, which improve plaintiff's ability to prove causation;
    - The creation of new technologies and materials, such as nanoscale chemicals, that might create new risks;
    - The changing approaches to environmental regulation, that might impact other categories of litigation including torts;
    - The growing preference for contracts litigation and consumer fraud class actions, over toxic torts, which might change the courts' caseload;
- Multi-district litigation is increasingly a feature of product liability litigation;
- North Carolina venture capital fundraising has been growing over the last few years, highlighting the advantages of creating businesses in a smaller jurisdiction with lower costs.
- Impact investing is increasingly driving investment decisions nationwide, and is drawing the attention of some investors and organizations in North Carolina;
- Raleigh accounts for nearly 40% of litigation involving North Carolina companies in the real estate and construction industry over the past years, and over 30% of litigation involving North Carolina pharmaceutical companies.
- In the technology sector, litigation involving North Carolina companies is largely heard out of state. Risk areas to monitor in the future include a potential downturn in the financial markets, ongoing trade negotiations, legislative/compliance risks and changing boundaries between technology and other sectors.
- The life sciences sector in North Carolina is experiencing strong growth and is recognized by industry group PhRMA as one of the top bioscience industry states.
- Despite the increase in the number of patents granted by the USPTO, litigation involving North Carolina companies is declining (except in regards to torts/negligence cases). One of the factors behind these numbers is an increasing reliance on the PTAB as a vehicle for challenging pharmaceutical patents.
- IP litigation is increasing in the agtech sector, along with litigation over farmers' right to repair increasingly complex and expensive equipment.
- Torts litigation is a feature of construction litigation that is set to increase due to the risks posed by a skilled labor shortage.

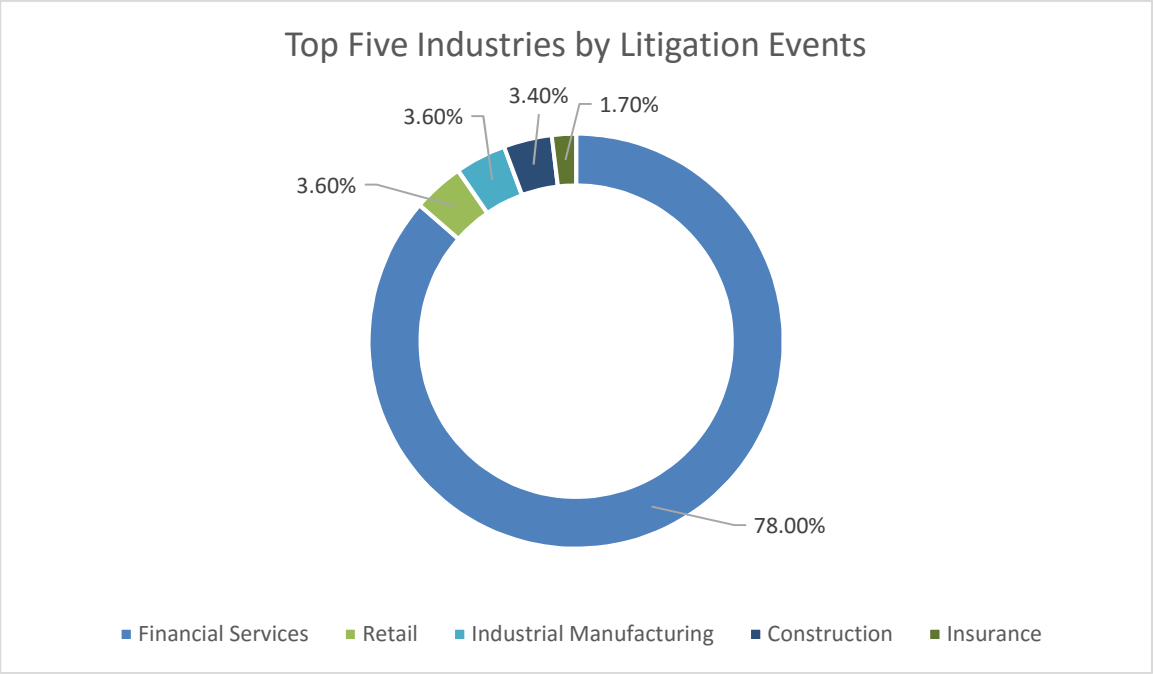
Litigation Trends in North Carolina

There's been a noticeable increase in litigation against North Carolina based companies since 2016, driven in part by an increase in commercial law and contract litigation, which accounts for 21.4% of litigation against N.C. companies over the past five years.



*As of December 12, 2018; Source: Monitor Suite (Dockets only)

The financial services sector accounts for the majority of litigation events involving N.C.-based companies, including 93.5% of all commercial law and contract litigation. The industrial manufacturing sector accounts for the most torts/negligence litigation, at 27.2%, while the retail sector accounts for 23.2%, the financial services sector 11.5%, construction industry 8.3% and food and agriculture 7.7%.



*As of November 19, 2018; Based on companies in N.C.
Source: Monitor Suite (Dockets only)

Per Monitor Suite, litigation in North Carolina district courts over the past five years has often concerned financial services (12%), insurance (10.8%), healthcare (6.8%), construction (6.5%) and industrial manufacturing (5.6%), among other sectors. The majority of cases before N.C. courts have dealt with criminal justice (67.1%), followed by torts/negligence at 3.4%, commercial law and contracts (3.3%) and intellectual property (1.6%).

Torts/negligence cases before N.C. district courts have primarily involved personal injury (64%) and product liability (25.8%) cases. Healthcare accounted for 10.3% of these cases, while pharmaceuticals accounted for 10.2%, industrial manufacturing accounted for 8.4% and construction 6.5%.

Although litigation has increased in recent years, the rate of litigation remained consistent so far in 2018. Nationwide, it appears the long-term trend is towards less litigation so this trend might also influence litigation in North Carolina in the years to come.

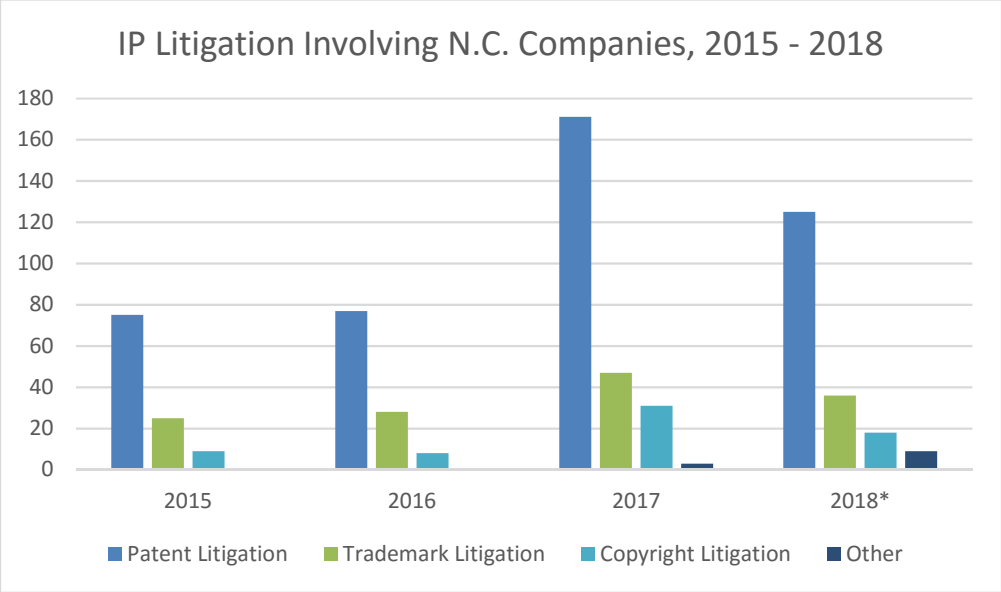
Chief among the concerns of litigants is that the court system is, in their eyes, expensive and time-consuming. The Conference of Chief Justices is working on changing the civil justice system to make it more efficient and accessible, though it might be some time before these changes impact public opinion.

Intellectual Property

In recent years, there has been a surge in patents granted by the USPTO. In June, the office issued its 10 millionth patent – but while it took seven years to get from 6 million (in 1999) to 7 million (in 2006), it took just three years to grow from nine million to 10 million. North Carolina ranks 22nd among 50 U.S. states for the number of patents awarded per 1,000 individuals in science & engineering occupations – a performance that has been improving over time, which aligns with the 2017 uptick in IP cases against N.C.-based

companies. The universities supporting the Research Triangle – UNC, NC State and Duke – are among the top 100 universities worldwide granted U.S. patents in 2017. Combined, they were granted 189 utility patents in 2017. Some of the top 300 patent holders also have a presence in the state, including BASF, Roche, Monsanto, Bayer, Merck.

However, the state's innovation ecosystem continues to lag somewhat behind the improvements of the nation overall based on 40 innovation measures. While organizations in the state generate significant intellectual property, commercialization activities among N.C. organizations are below the national average, which may contribute to the fact that IP accounts for a relatively minor share of litigation against N.C.-based companies. Monitor Suite data indicates that, as of November 2018, only 188 intellectual property cases had been filed involving N.C.-based companies, signaling a potential decline from a high of 252 in 2017. The technology and pharmaceutical sectors account for the most IP cases against N.C.-based companies.



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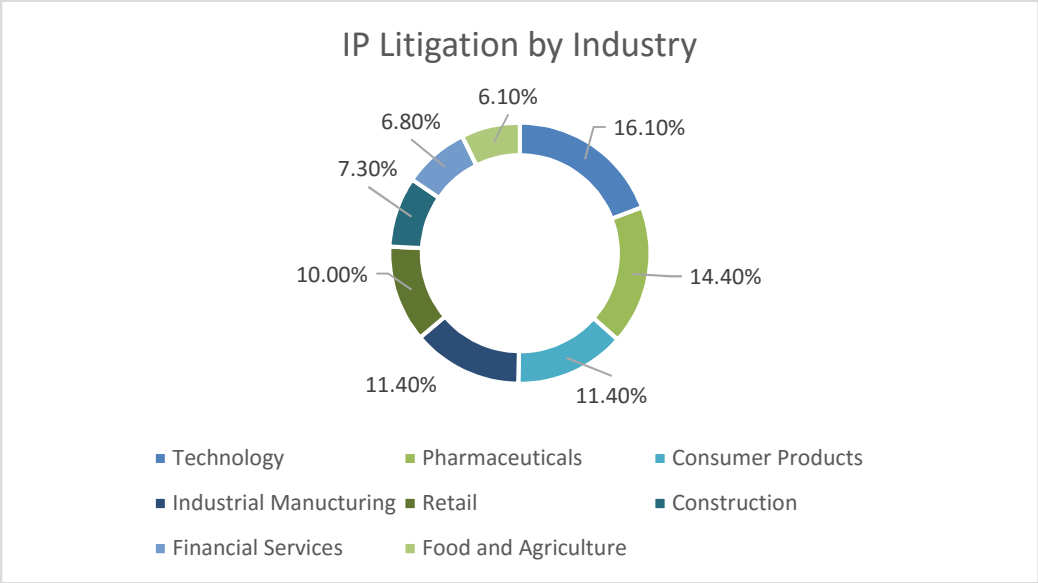
Source: Monitor Suite (Dockets only)

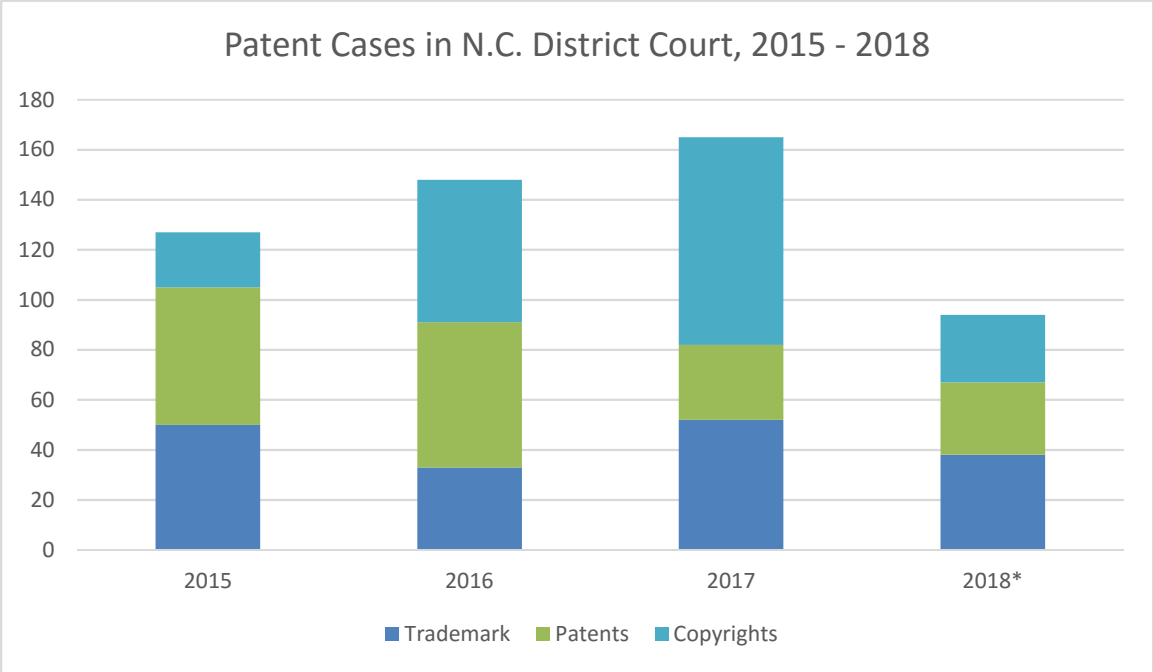


*As of November 19, 2018; Based on companies in N.C.
Source: Monitor Suite (Dockets only)

North Carolina, Patent Litigation Venue and Global Patent Enforcement

The impact of the Supreme Court's ruling in *TC Heartland v. Kraft* continues to change the patent landscape. The ruling placed limits on where patent infringement lawsuits can be filed by holding that patent suits should be filed in a defendant's incorporation state. The Federal Circuit has since held that the ruling represents a change in law, addressing the debate among lower courts about whether the ruling upended a prior Federal Circuit rule and put limits on where patent suits can be filed. As courts continue to implement the ruling, the landscape is shifting. An analysis by LexMachina shows that while the Eastern District of Texas remained the top court for new patent case filings in 2017, new filings in the district fell 48%. At the same time, the District of Delaware – the second place court for new filings – saw an increase of 71%.

Given the dominance of these courts, it's perhaps not surprising the North Carolina district courts see relatively few intellectual property cases. Trademarks (239) and patents (220) each accounted for just 0.6% of cases before these courts over the past five years, while copyrights (211) accounted for 0.5%. Intellectual property cases before N.C. district courts in the past five years have been relatively split between trademark (35.7%), patent (32.2%) and copyright (31.5%) cases. Notably, there was a decline in patent cases in 2017. In 2016, there was a peak of 58 patent cases. However, this declined to 30 in 2017 and 29 as of November 2018. In parallel, there was an uptick in copyright cases in 2017 (83 in 2017 versus 57 in 2016) but this doesn't appear to have been sustained in 2018.



*As of November 20, 2018
Source: Monitor Suite (Dockets only)

Another factor impacting patent litigation is a shift toward global enforcement strategies. Although lawsuits over patents by both foreign and domestic companies have historically been centered in the U.S., patent owners have increasingly been taking infringement disputes to courts around the world – which aligns with a trend downward in patent cases in the U.S. In China, for instance, the number of IP cases filed doubled from 2013 to 2017 as Chinese authorities have placed greater emphasis on IP enforcement and bolstered patent laws.

Patent Litigation Strategy, Claim Construction and the Amendment Process

Recent and proposed changes by the USPTO may have an impact on litigation strategies for both patent holders and challengers.

- In October 2018, the USPTO decided to replace "broadest reasonable interpretation" (BRI) standard in AIA proceedings at the PTAB with the Phillips rule used by district courts. The Phillips standard, established in the Federal Circuit's 2005 ruling in Phillips v. AWH, is based on how a person of ordinary skill in the art would understand patent claims at the time the invention was created. Although the Supreme Court upheld the BRI in 2016, the USPTO said replacing it with the Phillips standard will improve consistency and harmonization within the courts and the International Trade Commission. Petitions filed on or after Nov. 13 will operate under the new standard.
    - Ahead of the change taking place, the PTAB saw a spike in petitions, with 169 petitions filed in the first 13 days of November, versus just 160 in the entire rest of the year. Notably, 70 of the petitions were filed the day before the new standard came into effect.

  - The impact of the new standard remains unclear, though an analysis in 2017 by Vanderbilt Law Review found that there was little practice difference between the PRI and Phillips standard on validity determinations.

- Also in October, the USPTO said it is exploring a new claim amendment process for post-grant proceedings at the PTAB, citing issues with the existing process, which has largely prevented patent holders from amending claims in IPRs. Although the AIA explicitly provides for claim amendments, the USPTO said amendments are filed in less than 10% of AIA trials and not often granted. The office said the expected changes to the process will provide patent owners a "meaningful opportunity" to establish a narrower claim.

USMCA and Intellectual Property

If finalized and implemented, the United States-Mexico-Canada Agreement will establish a new legal framework for intellectual property. The agreement will:

- Strengthen patents for biologic drugs;
- Protect industrial designs from unauthorized uses;
- Establish a framework for geographical indications;
- Offer protection against trademark infringement and protections for non-traditional sound and scent marks;
- Extend the general term of copyright protection from 50 years to 70;
- Set national obligations to ensure foreign and domestic firms are treated the same;
- Establish a legal authority for officials to stop suspected counterfeit or pirated goods at borders;
- Provide for civil and criminal enforcement, remedies or penalties for misappropriation of trade secrets.

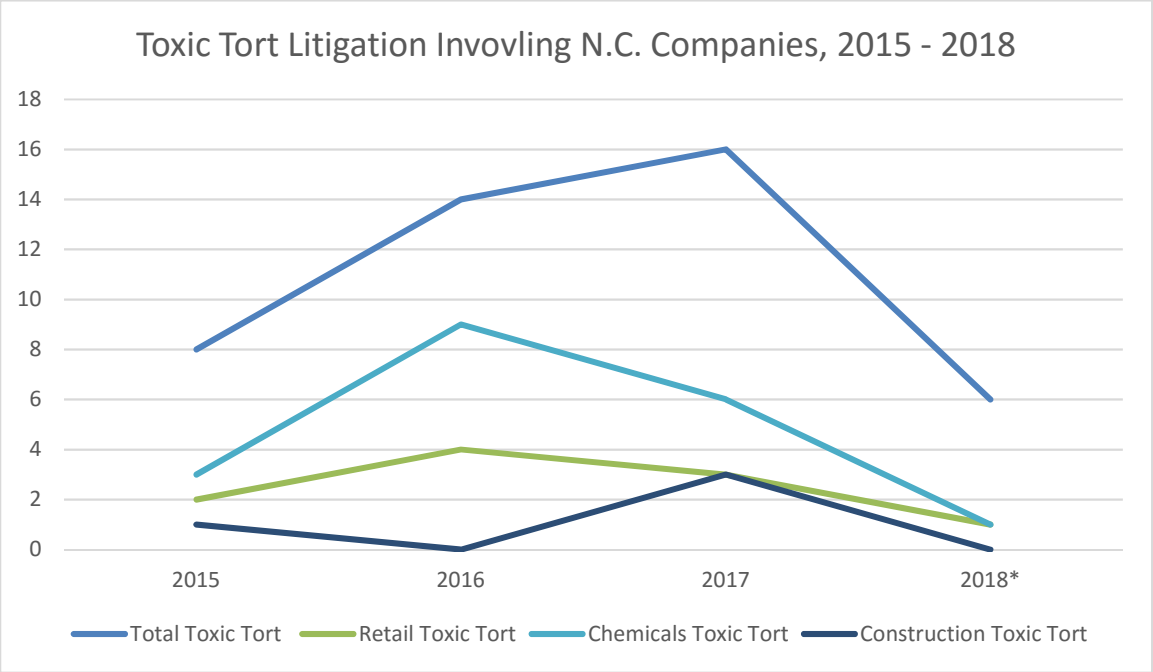
Trade Secrets

Trade secret cases have accounted for a small portion of the overall intellectual property litigation in North Carolina over the past five years. Still, within this category there has been a relative increase in cases in 2017 and 2018, where there were 18 recorded for each year, up from 3 in 2015 and 2 in 2016, according to Monitor Suite data. The primary industries involved in these cases – accounting for more than half of all North Carolina trade secret litigation in that timeframe – include industrial manufacturing (30%), health care (11%), pharmaceuticals (11%) and technology (11%).

Toxic Torts

To date in 2018, there's been a decline in toxic tort cases involving N.C.-based companies following a high in 2017. Over the past five years, there have been 49 toxic tort cases involving companies in the state. Toxic torts accounts for a small share – just 0.2% – of overall torts/negligence cases.

The chemicals sector has accounted for the majority (46.7%) of cases, though there's been a downward trend since 2016. The retail sector accounted for 26.7% over the past five years, while the construction sector accounted for 8.9%.



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Source: Monitor Suite (Dockets only)

Advances in medical science strengthen causal link

Toxic torts litigation is inherently unpredictable, as it involves liability for exposure to a dangerous substance – this can be occupational, environmental, medical or domestic exposure. Over time, scientific improvements have led to a better identification of causation in toxic tort cases. As a result, plaintiffs are better able to access compensation – two recent examples are talcum powder litigation and pesticides litigation. Both turned on whether the products at issue were carcinogens.

If products are known to be toxic but their use persists, regulators use the enforcement tools available to them and raise public awareness of the dangers of these products. For example, since e-cigarettes were created in 2003, regulators have gradually stepped up their enforcement efforts and warned the public about the dangers associated with these products:

- **2008**: World Health Organization states there is no scientific evidence to confirm that e-cigarettes are a "safe and effective smoking cessation aid;"
- **2010**: Food and Drug Administration discourages use of e-cigarettes, saying they contain carcinogens.
- **2014**: Center for Disease Control (CDC) reports the number of calls about nicotine liquid to poison centers rose from one per month in 2010 to 215 per month in 2014.
- **2016**: CDC reports that vaping is a gateway to tobacco use for teens.

- **2018**: FDA sends over a thousand warning letters and administers 131 fines to stores for the illegal sale of e-cigarettes to minors.

Faced with mounting evidence that e-cigarettes contain toxic chemicals and target youth, the FDA expanded its tobacco-prevention campaign called "The Real Cost," by including messages focused on preventing youth use of e-cigarettes.

Some new technologies create their own risks

Other scientific developments might create risks of their own. For example, nanotechnology is an emerging issue in toxic torts, as the technology is new and some of the risks associated with it may not be fully understood. In 2017, the EPA issued a final rule on reporting requirements under the Toxic Substances Control Act, as they relate to nanoscale chemicals. The rules require manufacturers to disclose various information including "existing information concerning environmental and health effects." This disclosure will assist the regulator in determining whether nanoscale chemicals are toxic to persons or the environment.

Limited environmental regulation highlights importance of civil litigation

Toxic torts are also connected to changes in the environment, or industries that have a major environmental footprint such as the extractive sector. At the national level, environmental regulation is changing. For example, the Trump administration proposed to limit the federal government's authority to regulate the pollution of wetlands and rivers, by introducing a "new construct" limiting regulation to streams that hold water in a "typical year" as determined by precipitation over the past 30 years. The move is consistent with the priorities announced with President Trump took office, and an executive order issued in February 2017 directing the EPA to eliminate the rule.

More information on recent changes to federal environmental regulation is published on the White House website. Additionally, the National Geographic Society tracks environmental policy changes as they occur, and compiles them on its website. One overarching trend since 2017 is a shift towards granting more responsibility to the states, including with respect to enforcement powers.

Despite the changes to federal environmental regulation, civil litigation continues to provide an avenue to litigate major environmental damage. For example, the growth of hydraulic fracturing has been a controversial topic in environmental and energy law for years, but there is also overlap with toxic torts litigation as plaintiffs report their drinking water is contaminated with methane.

Torts losing ground to other civil claims

At a high level, litigation is declining nationwide, as courts are increasingly seen as a time-consuming and expensive means of redress. In 2017, tort lawsuits nationwide accounted for only 4% of all civil filings in state courts, down from 16% in 1993. Meanwhile, contracts cases accounted for 51% of civil filings in 2017, up from 18% in 1993.

Although the decline in the number of tort cases might seem dramatic, these don't necessarily mean the underlying issues aren't being litigated. Instead, the issues might sometimes be presented to the courts under a different angle, because of the relative difficulty of presenting a torts case.

Among those difficulties is the cost of proving causation through scientific evidence. The American Bar Association noted that a current trend in this area is to litigate based on a consumer-based theory, to avoid "difficult and expensive causation issues." It cited as an example the litigation that followed the IARC's designation of the pesticide glyphosate as a "probable" carcinogen, following which litigation was introduced against Quaker Oats, alleging the company wrongfully labeled its product as "natural", when the crops were treated with glyphosate. Similar litigation is currently targeting Kellogg's.

Another practical issue is time. The U.S. Supreme Court decided in CTS v. Waldburger that state "statutes of repose" were not preempted by federal legislation. Statutes of repose (also known as nonclaim statutes) are different from statutes of limitations, but their effect is similar because they limit certain legal rights if they aren't asserted by a specific deadline. The difference was articulated as follows in the Supreme Court decision summary:

> Federal law pre-empts state-law statutes of limitations in certain tort actions involving personal injury or property damage arising from the release of a hazardous substance, pollutant, or contaminant into the environment. 42 U. S. C. §9658. Petitioner CTS Corporation sold property on which it had stored chemicals as part its operations as an electronics plant. Twenty-four years later, respondents, the owners of portions of that property and adjacent landowners, sued, alleging damages from the stored contaminants. CTS moved to dismiss, citing a state statute of repose that prevented subjecting a defendant to a tort suit brought more than 10 years after the defendant's last culpable act. Because CTS's last act occurred when it sold the property, the District Court granted the motion. Finding §9658 ambiguous, the Fourth Circuit reversed, holding that the statute's remedial purpose favored pre-emption.

The Supreme Court then reversed the Fourth Circuit's decision. Since that decision was issued in 2014, the application of state legislation might have limited the amount of toxic tort litigation in the U.S., but this is difficult to quantify as there are many other variables.

More recently, the U.S. Court of Appeals for the sixth circuit ruled in Martin et al. v. Behr Dayton Thermal Products LLC, et al. that class certification was appropriate in a toxic tort action. This eases the barriers to accessing the courts system in such cases, and might lead to increased litigation.

Product Liability

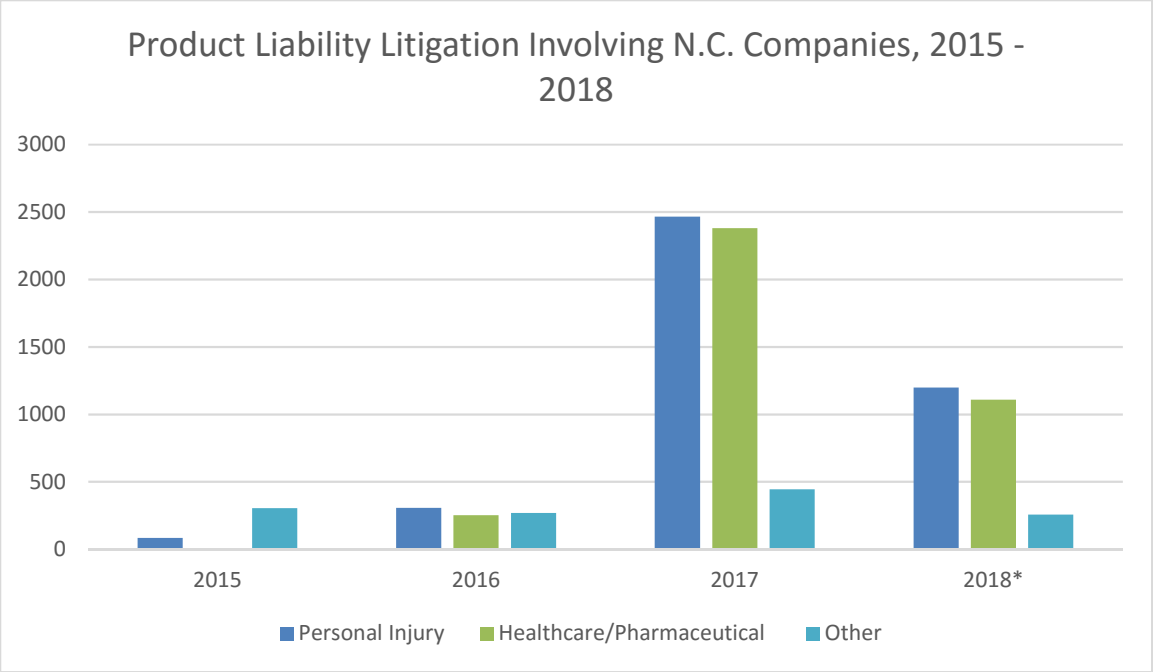
Pharmaceutical sector is a primary source for product liability cases and the sector is seeing a growth in multi-district litigation (MDL). MDL-associated cases accounted for more than 97% of medical device and paramedical cases filed in 2017, according to Lex Machina. In fact, of the 29,185 total cases filed, only 667 aren't affiliated with an MDL master case. Since 2009, more than 289,200 product liability cases have been filed in District Court involving products classified by Lex Machina as medical devices or pharmaceuticals. The second biggest category was asbestos cases, which accounted for 87,300 cases. The technology sector is also expected to see an increase in product liability amid the continued proliferation of AI and emerging technologies such as driverless cars.

Product liability cases accounted for nearly a third (29.7%) of torts/negligence cases involving N.C. companies in the past five years. There was a significant increase in product liability cases in 2017, driven by a surge in

healthcare/pharmaceutical product liability and personal injury cases. In 2018, the number of cases continued to exceed levels observed before the peak in 2017, though there was noticeable decline.

Interestingly, given its life sciences sectors, pharmaceuticals accounted for a small share of product liability cases involving N.C. companies, perhaps due to the multi-district nature of pharmaceutical product liability cases and the state of incorporation of pharmaceutical companies. However, pharmaceuticals accounted for the biggest share of product liability cases heard before N.C. district courts. Food and agriculture accounted for the majority of product liability cases involving N.C. companies, perhaps not surprising given the size of the agriculture industry in the state.

Three districts have the largest percentage of non-MDL-associated cases, each of which captured 5% – the Central District of California (C.D. Cal), Eastern District of Pennsylvania and District of New Jersey. N.C. district courts heard 121 product liability cases in 2017, up from 92 in 2016 and 77 in 2015. So far in 2018, the court has heard 72, signaling a likely downturn versus 2017. Product liability cases before N.C. district courts over the past five years primarily involved pharmaceutical (26.1%), healthcare (19.3%) and industrial manufacturing (12.1%) companies.



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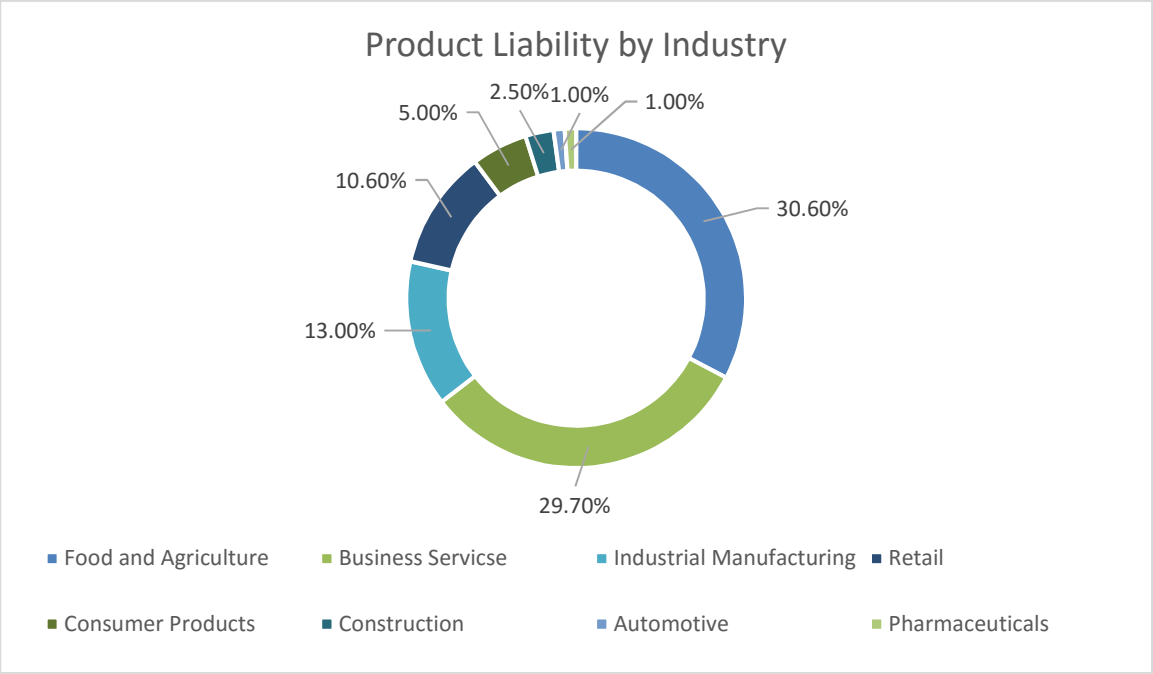

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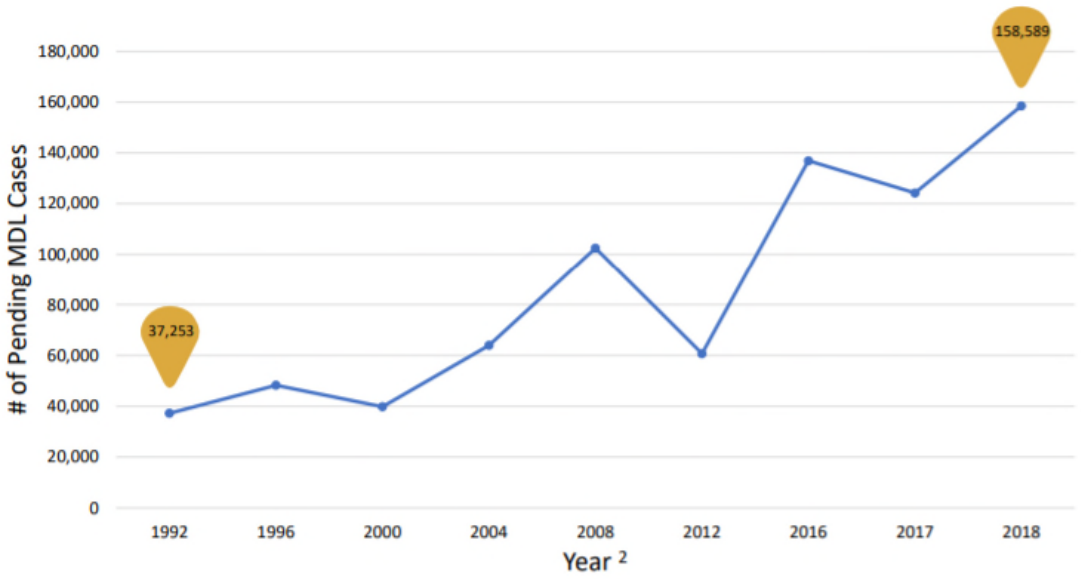
Product Liability Drives Multi-District Litigation

Product liability lawsuits are fueling an uptick in multidistrict litigation, according to Lawyers for Civil Justice, a coalition of defense trial lawyer organizations, law firm and corporations. Over the past 25 years, 90% of MDL have been in products liability. The report suggests cases coordinated into MDLs account for 47% of the total civil docket of cases in U.S. courts, with the exclusion of Social Security and prisoner lawsuits. Since 1992, the number of cases has more than tripled.

The rise in MDL is pushing certain defense bar groups to push for changes stemming from procedural issues such as the filing of meritless cases and use of external litigation financing. A subcommittee of the Advisory Committee on Civil Rules is exploring whether to establish MDL rules, especially pertaining to the use of external litigation financing, which defense bar groups say is fueling the increase in cases. The committee agreed to consider the matter after the U.S. Chamber of Commerce's Institute for Legal Reform, Lawyers for Civil Justice and other groups submitted a proposal to amend the Federal Civil Rule of Procedure 26 to mandate disclose of external financing agreements that are contingent on the outcome of case.



Source: Lawyers for Civil Justice

Global Divergence on Product Liability

Although other jurisdictions are starting to adopt norms from the U.S. market place, such as the prevalence of advertising in product liability claims, different regulatory approaches are being created. Under the current Republication administration, it's expected that the adoption of new consumer regulations will slow down. However, other jurisdictions in areas such as Europe are ramping up consumer protection amid developments such as the Volkswagen emissions scandal and issues with Whirlpool dryers causing fires. Although the extent of potential regulatory action in these other jurisdictions remains unclear, there appears to be a split playing out as the U.S. leans towards less action and others lean toward heightened action.

North Carolina transactions, fundraising

VC fundraising close to 2017 levels, tops 2016

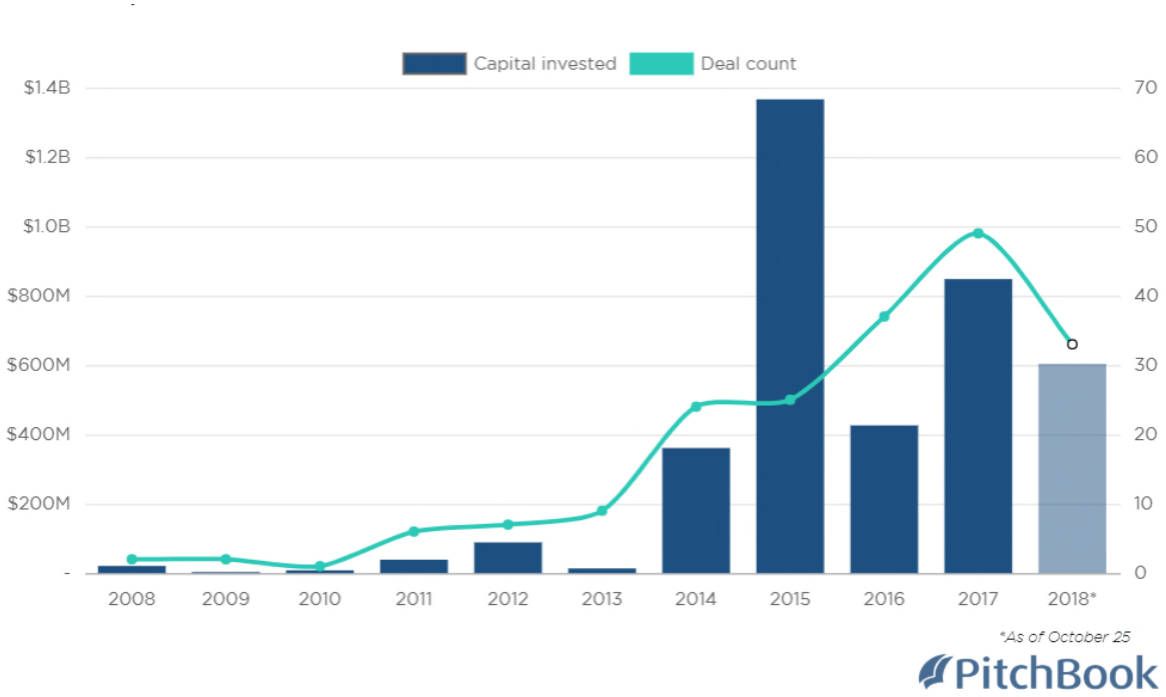
As a potential sign of future M&A activity, venture capital activity is brisk in North Carolina. In the second quarter of 2018, 38 North Carolina companies closed over $400 million in investment, according to the Pitchbook-NVCA Quarterly Monitor report. Although slightly down from the first quarter of 2018, when 41 companies raised over $450 million, the six-month total of $868 million has almost matched the total for 2017 and has topped the total for 2016.

Although VC in North Carolina is generally at an earlier stage, and deal size is comparatively smaller, one of the advantages of a comparatively smaller jurisdiction is to provide a lower cost of living and of running a business. As suggested by Pitchbook, this "decreases the need for outsized funding rounds." North Carolina funds such as One Better Ventures are therefore recognized as early movers that play a vital role in the VC ecosystem.

Since at least 2016, the North Carolina VC sector is well known for:

- Software,
- Healthcare services,
- Pharma & Biotech,
- Commercial services, and
- IT hardware.

Since then, VC funding has remained strong for the tech sector including, notably, mortgage tech. In October, mortgage tech startup Ribbon raised $225 million in a combination of Series A equity and debt funding. Nationwide, the subsector hasn't been in the spotlight as much as the real estate tech sector, but it has attracted significant amounts of capital in the last five years:

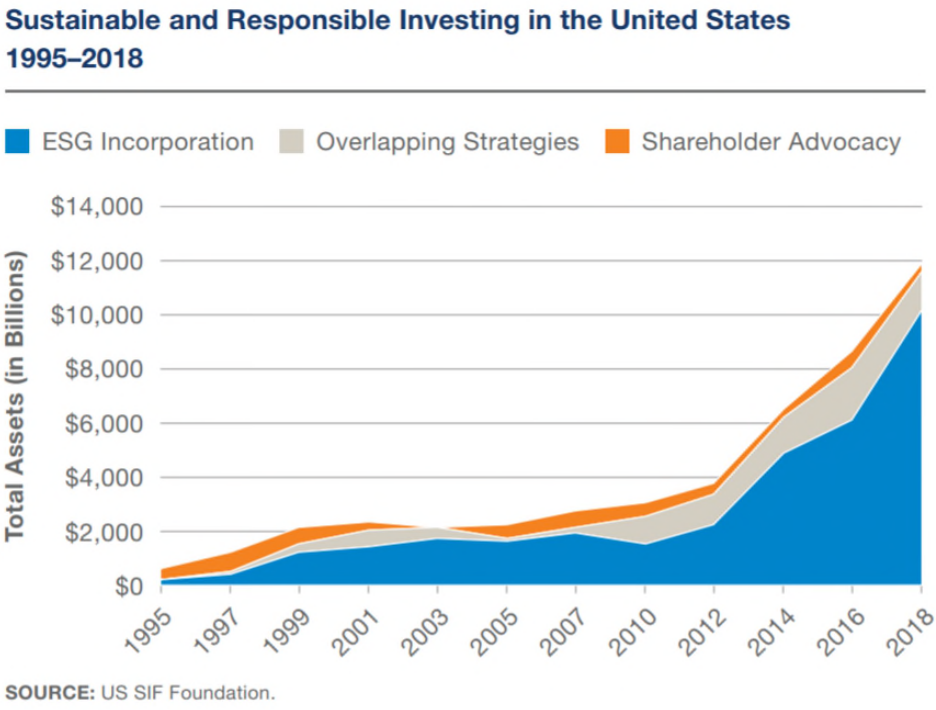


As observed by Pitchbook, mortgage tech is now a feature of mortgage lending. In 2010, over 64% of mortgages originated with the top five deposit-taking bank, whereas by 2016 that proportion had already fallen to 25%. Currently, submitting a mortgage application online is the most common method of applying for a mortgage for the first time.

Impact investing draws local interest

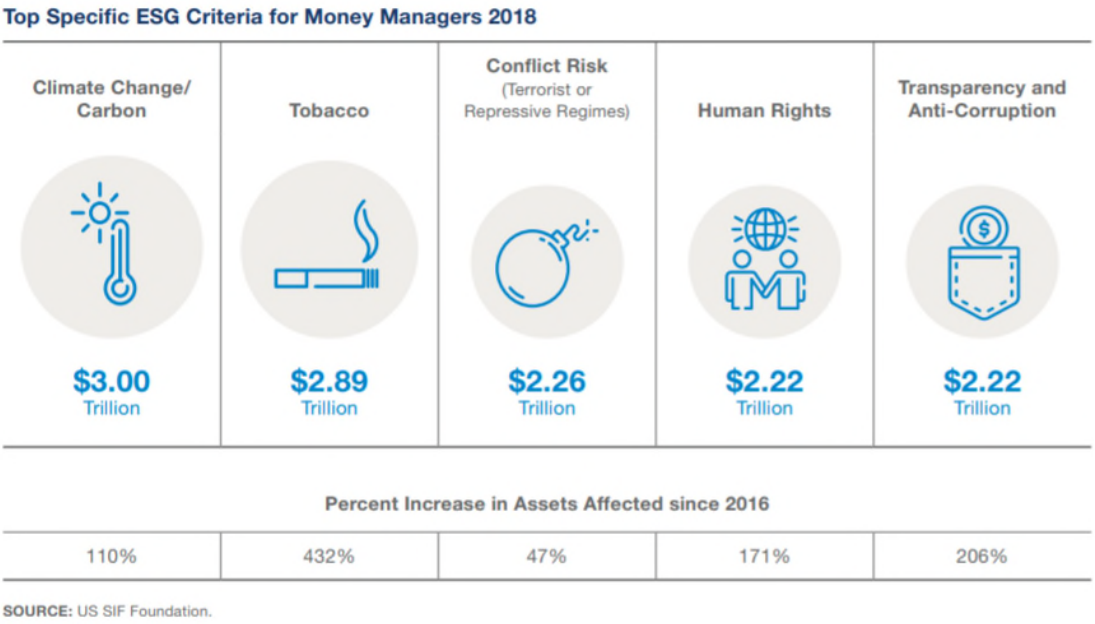
Another trend to follow in the financial sector is "impact investing" – an investment strategy that consists in generating specific social or environmental benefits. Nationwide, impact investing is now reportedly a $250

billion market. By another measure, assets under management have grown to $12 trillion in the U.S. This figure is provided by the U.S. Forum for Sustainable and Responsible Investment (USSIF), which has been tracking the sector's growth since 1995:



SOURCE: US SIF Foundation.

Of this $12 trillion, $11.6 trillion were held in U.S.-domiciled assets at the beginning of 2018, whose managers applied various environmental, social and governance (ESG) criteria in their investment analysis and portfolio selection. The USSIF identified the following ESG criteria as being the most important for money managers:



SOURCE: US SIF Foundation.

There is less information on ESG and impact investing at a local level, however these are issues of concern for many local investors and entrepreneurs:

- January 2018: NC's Council for Entrepreneurial Development organized a sustainability-themed gathering;
- June 2018: NC State University's "Responsible" fund outperformed its main portfolio;
- October 2018: University of North Carolina at Asheville and UNC Asheville Foundation have more than $50 million endowment in sustainable investments;
- October 2018: Impact investing arm of Bain Capital makes investment in senior care facilities.

Global PE outlook positive, but state investors lukewarm

The global outlook for PE is positive, based on the following results of a poll conducted by Deloitte on 2019 PE trends:

> "79% of all respondents expect the number of deals they close in the next 12 months to increase, up from 70% last year. There is also a notable drop in corporate and private equity respondents who foresee deal flow flattening or abating—with only 21% anticipating a flat-to-down year for M&A ahead, compared with 30% a year earlier."

At the national level, Deloitte reports that U.S.-headquartered corporations and 87% of M&A leaders at domestic private equity firms expect the number of deals their organizations will close over the next year to increase.

In North Carolina, the treasurer in charge of the public retirement fund decided to shift more than $7 billion from outside equity managers into cash and bonds. The move reduced fees, but was controversial as it might have limited the opportunity to profit from recent gains in the financial markets.

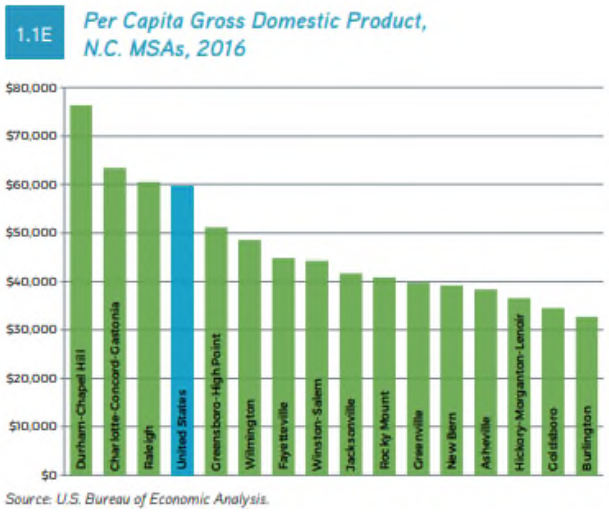
Additionally, investments with other managers slowed because of this skepticism of hedge funds and other illiquid investments. In January 2018, the state pension fund dropped its PE allocation to zero. In fact, the only asset class in which North Carolina invested with an outside manager in 2017 was real estate, due to a single $250 million commitment with LBA Realty.

The debate reportedly continues amid pension funds, on how to balance fees and ROI. As pension funds attempt to make changes, one of the issues they are confronted with is the ratios, or target allocations – decreasing their commitment on one asset class might put them out of line with their target allocations. This is what happened to the LA County Employees Retirement Association, after a two-year moratorium on PE allocations which only forced it to boost its allocation all at once.

In the event of a downturn, the reverse is true. This is known as the "denominator effect" – if the relative weight of equities diminish, institutional investors divest their PE portfolios *en masse* to re-establish their target allocations. As speculation mounts that an economic downturn might occur within a year or two, this will be one area to follow in light of the high leverage of PE firms.

Raleigh Litigation

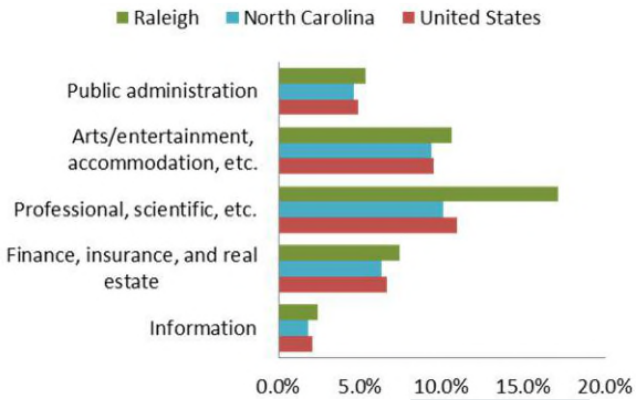
As a central economic center in North Carolina and anchor in the Research Triangle, Raleigh is home to an array of businesses and accounts for large shares of litigation activity among N.C. companies.



The Milken Institute ranked Raleigh the second best-performing economy among large U.S. metro areas in 2017 and, in 2016, the region was third for GDP growth among metro areas according to statistics from the U.S. Department of Commerce and Wells Fargo Securities. The city had higher per capita GDP than the U.S. average in 2016.

The city boasts high employment in creative and technology fields and a well-educated workforce, with 48% of residents holding a bachelor's degree or higher. The city's tech industry is burgeoning and is attracting an expanding base of technology industries. Computer and electronics manufacturing doubled its workforce to 11,900 over the past five years and the city was on the shortlist for Apple headquarters, though the company opted for Austin instead. However, the top three industries in terms of jobs in 2016 continued to be in the service- providing industries, including: Professional and Business Services; Education and Health Services; and Trade, Transportation, & Utilities. The Real Estate sector contributed 32.5% to real GDP growth, and Professional and Business services accounted for 23% of real GDP growth in 2016

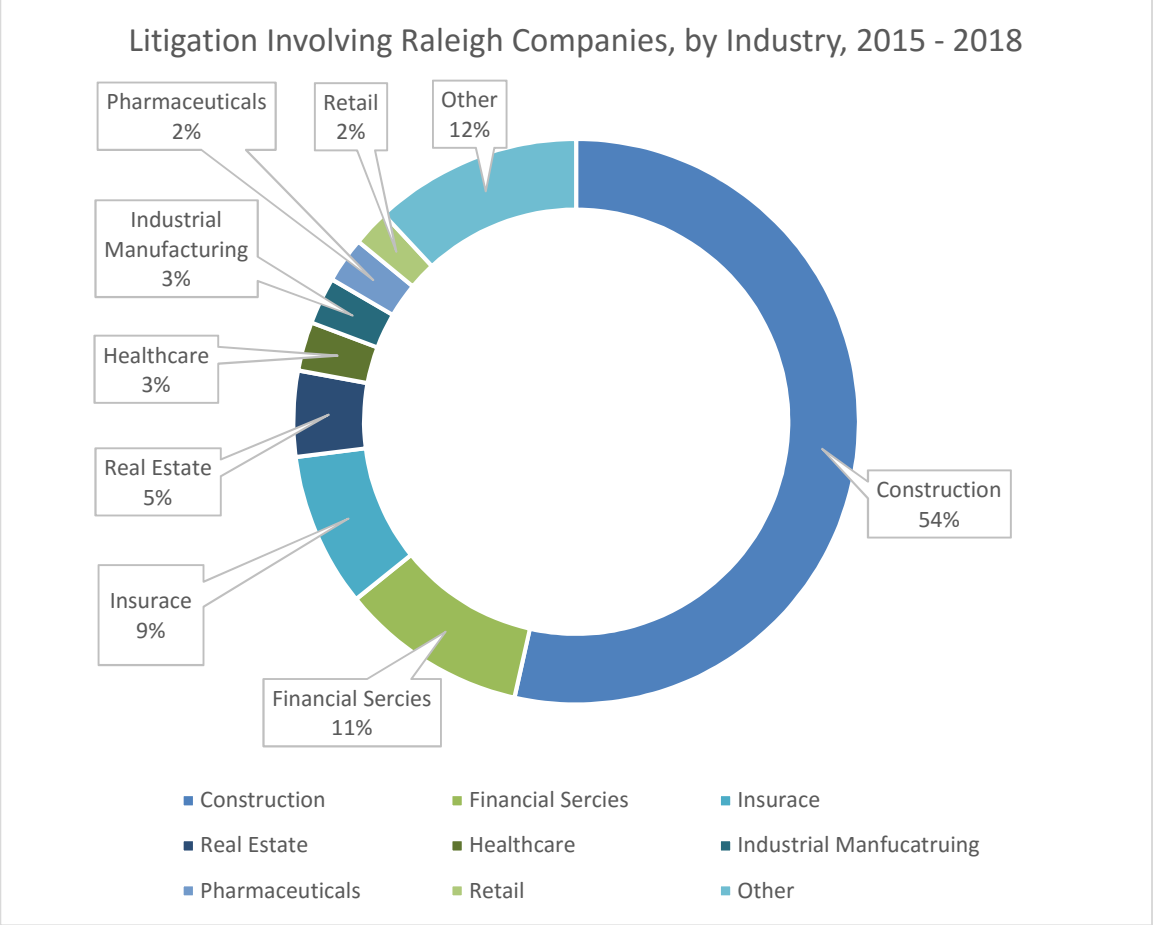
The city is home to North Carolina State University, supporting a network of academic researchers and securing a large share of patent activity in the state. Raleigh is a leader in terms of new tech patents per 1,000 people and North Carolina's patenting is highly concentrated in a small number of universities located primarily in the Research Triangle region, which includes Raleigh.



With its standing as an economic center and positioning within the growing Research Triangle, Raleigh-based companies accounted for:

- 39.9% of litigation involving N.C.-based companies in the real estate and construction industry over the past five years;
- 31.3% litigation involving N.C.-based companies in the pharmaceutical industry over the past five years; and
- Just 4.7% of litigation involving N.C.-based companies in the technology industry over the past five years. This number may increase as the city's tech industry continues to grow.

Although the leading industries in the city are service-based, more than half of litigation involving Raleigh-based companies was in the construction industry (53.5%). The financial services industry accounted for the second largest share, at 10.7%. Real estate accounted for 4.9% of litigation, while the pharmaceutical sector accounted for 2.6% and the technology sector accounted for only 0.8%. The share of technology and life sciences could expand as the Research Triangle continues to attract life sciences, agtech/agbio companies and technology companies.



*As of November 30, 2018
Source: Monitor Suite (Dockets only)

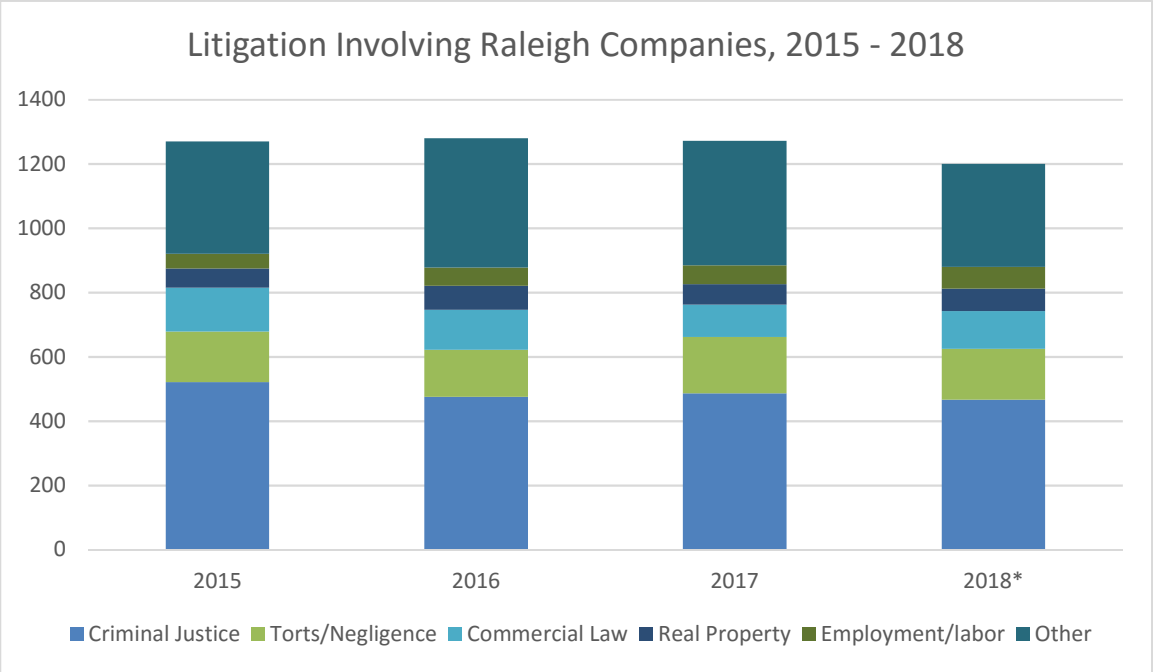
Over the past five years, torts/negligence accounted for 10% of cases involving Raleigh-based companies, while commercial law and contracts accounted for 7.7%. Criminal justice accounted for the largest share of cases, at 29.8%. Despite some fluctuations, the number of cases involving Raleigh-based companies has been relatively consistent since 2015. Torts and negligence cases comprised mostly personal injury (41.5%) over the past five years. Mass torts accounted for 11.5% and product liability accounted for 8.6%. Toxic torts accounted for 0.2% of cases.

There were 4,107 litigation events involving the construction industry in Raleigh over the past five years, primarily related to criminal justice cases (52%). Torts/negligence accounted for 3.4% of litigation involving

construction companies in Raleigh, while commercial law and contracts accounted for 2.1%. For the real estate industry, there were 374 litigation events. torts/negligence accounted for 15.9% of cases, commercial law and contracts accounted for 15.4% ad creditor/debtor accounted for 7.5%. Torts/negligence cases involving the real estate industry primarily involved personal injury (42.4%) and premises liability (21.2%).

There were 200 cases in the past five years involving pharmaceutical companies in Raleigh. This comprised primarily intellectual property litigation (36.7%) and torts/negligence (16.5%). Commercial law and contracts accounted for 10.6% of litigation involving these companies. Intellectual property cases primarily involved patents, which accounted for 91.3% of cases. Abbreviated new drug applications accounted for the remainder of the intellectual property cases. Torts/negligence cases were split among personal injury cases (46%) and product liability (42%).

There were 64 litigation events for the technology industry in Raleigh over the past five years. Patents accounted for the biggest share of cases (23%), followed by commercial law and contracts (18%). Only two cases (6.6%) involved torts/negligence.



*As of November 30, 2018; Based on companies in Raleigh
Source: Monitor Suite (Dockets only)

Industry Breakdown

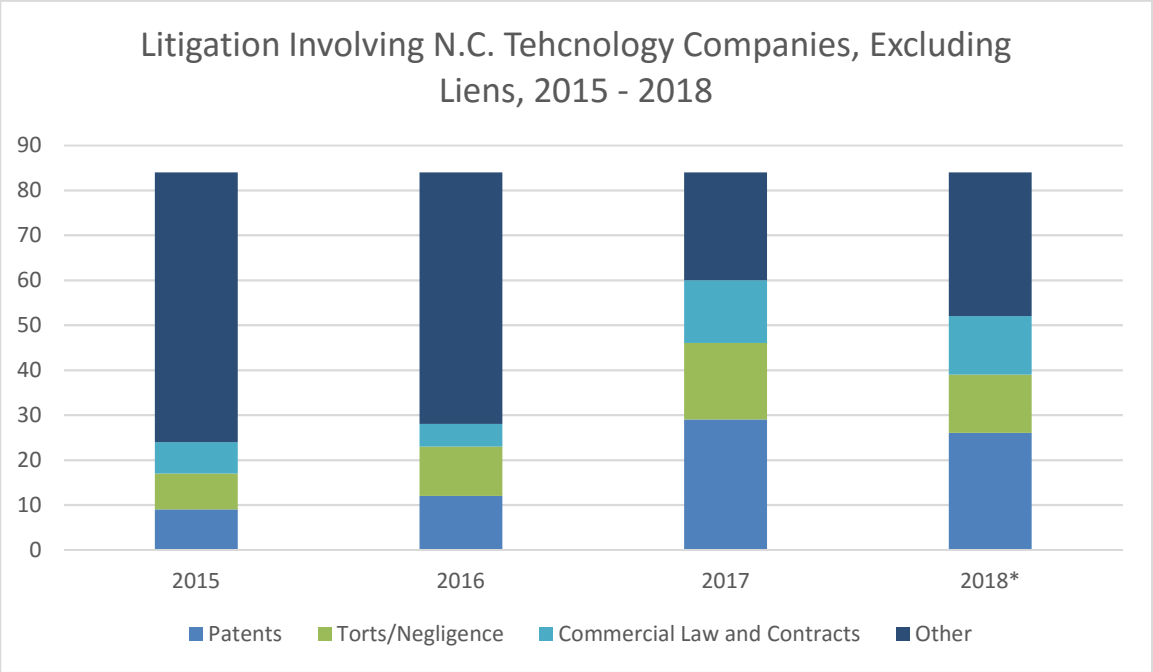
Technology

At the federal level, North Carolina companies account for a small share (2%) of U.S. litigation involving technology companies. Monitor Suite data suggest the majority (66.7%) of litigation involving N.C. technology companies has dealt with liens. However, the data is skewed by 763 liens cases in 2018. If liens are included

in a five-year average, patents account for 7.3% of this litigation, torts/negligence for 4.5% and commercial law and contracts for 3.7%. Excluding liens, the proportions increase to 22% for patents, 13.5% for torts/negligence and 11.1% for commercial law and contracts.

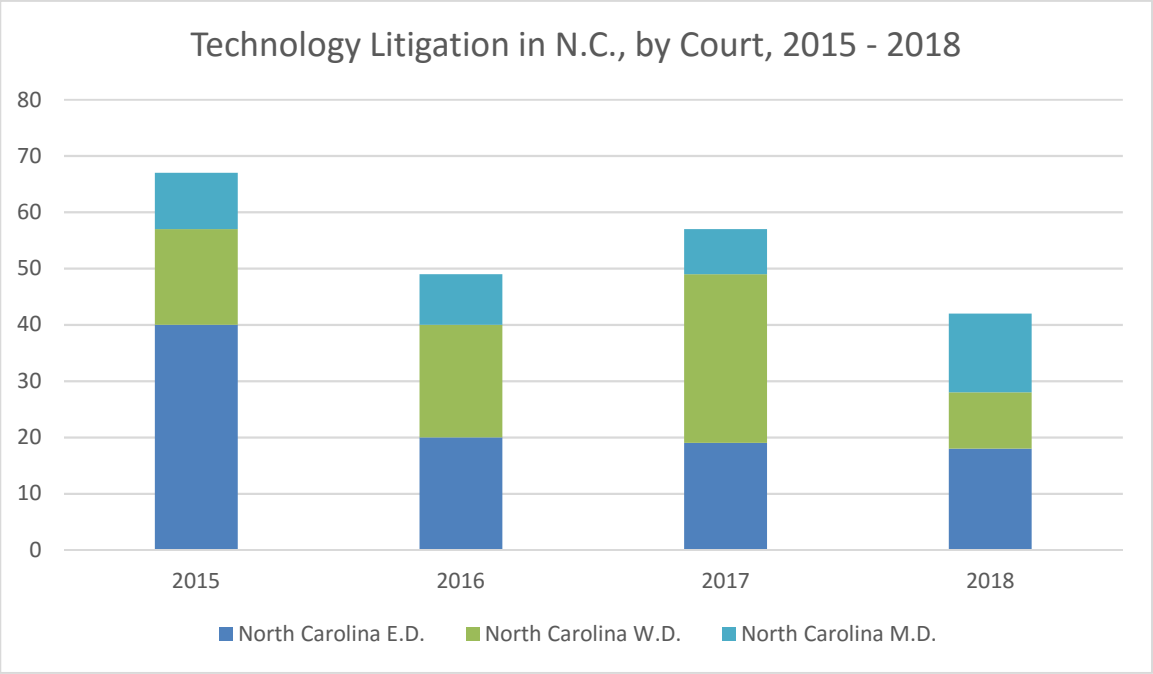
Key findings:

- **Patent litigation** involving N.C. technology companies has slightly increased from 2015 to 2016, but more than doubled in the following year. As of November 2018, the number of patent cases is close to reaching the highs of 2017.
- **Commercial law and contracts litigation**, much like patent litigation, has more than doubled from 2016 to 2017, while 2018 is close to the previous year's high.
- **Torts litigation** is characterized by a large proportion (42.3%) of personal injury cases over the past five years, continuing an upward trend. Product liability accounted for 17.3% of tort cases over the past five years, though there has been a downward trend in the number of cases since a peak in 2016.



*As of November 2018; Based on companies in N.C.
Source: Monitor Suite (Dockets only)

Although N.C. companies account for 2% of federal litigation in the technology sector, these cases are largely heard out of state. North Carolina district courts account for 0.2% of technology litigation nationwide. Over the past five years, this litigation primarily involved commercial law and contracts (20.6%), torts/negligence (13.2%), employment/labor (12.9%), civil rights (12.5%) and patents (7%). Of these tort cases, 62.5% were personal injury matters, 25% product liability and 12.5% mass tort.



*As of November 2018
Source: Monitor Suite (Dockets only)

Financial market risks

The technology sector in North Carolina has reportedly added 10,000 new jobs in 2017, growing to approximately 335,500 tech workers. This represents an estimated $39.3 billion, or 8.3% of the state economy. Jobs in the technology sector are comparatively well paid, as they account for 5.8% of all jobs in the state, but almost 11% of the state's total wage earnings and sales.

However, market conditions are becoming increasingly challenging as the 10-year bull market is losing steam – this appears to be the bipartisan consensus, and the consensus among investors with at least $1 million in a brokerage account. The Office of Financial Research, an arm of the Treasury Department, warned Congress that market risks remain high, even though macroeconomic risks are currently moderate. The OFR noted that stock prices are "historically high", and bond prices are vulnerable to price declines due to the possibility of rapid interest rate increases.

Leverage is another issue facing the financial markets, as deregulation has led banks to offer highly leveraged loans, while private equity firms continue to push for aggressive buyout deals. Regulators such as Federal Reserve Chair Jerome Powell, his predecessor Janet Yellen, and the Bank of England have increasingly warned about the risks of increased leverage, with limited effect.

Although not specific to the technology sector, this elevated market risk could have a significant impact, leading some to speculate of a tech bubble comparable to that of the late 90s. The rise of "unicorns" (start-ups valued at $1 billion or more) led the National Bureau of Economic Research to caution that such companies are overvalued by approximately 50%. Therefore, if market conditions worsen, some technology companies might incur steep losses, and these losses would reverberate in the financial markets due to significant leverage.

Trade risks

Another key market risk is the ongoing trade war between the U.S. and China, and other countries. This could greatly affect the U.S. technology sector, due to its strong links with China. Electronic components are often sourced in China, and products are often assembled there as well – one notable example is the iPhone. In 2017, computer accessories, telecommunications equipment, computers, cell phones and other household goods imported from China were worth over $150 billion dollars.

The same year, China launched a special economic zone focused on high tech, and the Chinese government reportedly has a plan to make China a leader in mobile technology, supercomputers and artificial intelligence. Meanwhile, the high tech sector is increasingly protected on national security grounds, as shown by the U.S. government ordering a national security review of Broadcom's proposed takeover of Qualcomm – a deal which ultimately fell through. If investors are trying to hedge against the risks of a trade war, tech stocks might therefore be vulnerable to changing policies, because the sector features complex supply chains and equities in this sector are comparatively expensive.

Legislative/Compliance risks

The technology sector might also need to meet new legislative requirements, as bipartisan consensus is growing around the U.S. for the need to adopt privacy legislation similar to Europe's GDPR. Although previous bipartisan attempts at adopting this legislation have failed, major industry players such as Apple, Google, Amazon and Twitter have reportedly supported a national data privacy law. However, this support is contingent on the federal legislation preempting California's.

Meanwhile, there is strong regulatory support for data security legislation as well. Officials from the FTC have recently renewed their support for the proposal, saying "the Commission continues to reiterate its longstanding bipartisan call for comprehensive data security legislation". The same day, a FTC Commissioner called for increased funding to support the Commission's ability to conduct complex litigation involving anti-competitive behavior.

In addition, there is growing pressure for technology companies to manage the content they host, due to reports of misleading information or inappropriate behavior. The European Commission recently introduced a bill that would require sites such as Facebook to remove content produced by terrorist organizations, within an hour of being flagged by authorities. Penalties are yet unspecified but could be steep.

Blurred lines between tech and other sectors

Meanwhile, the frequency and severity of worldwide IP litigation is increasing, based on litigation cost survey results and globally sourced litigation data. There are several factors driving this trend, including a sharp increase in grants of IP rights, the growing use of trade secrets to protect innovation, an increase in technology-related M&A, greater mobility of IP and the integration of technology into sectors such as health and finance. Morgan Stanley, for example, speaks of an "operational revolution" as banks are transformed into tech companies as financial infrastructure changes.

Meanwhile, large technology companies are expanding their operations to other sectors – for example, Google has launched two life sciences companies, Calico and Verily (formerly Google Life Sciences), respectively in 2013 and 2015. More recently, the General Manager of the Bank for International Settlements observed the following:

Large technology companies with established user networks ("big tech") are challenging traditional finance. Having started with payments, in some markets such companies have been expanding into the provision of credit, insurance and even wealth management. They have been doing so either directly or in cooperation with incumbent financial institutions.

As a result, the line between technology companies and companies in traditional sectors (including finance) is increasingly blurred. This poses new regulatory challenges, around competition, data protection and financial stability.

How does the law respond to technological change?

As the technology sector changes, it is important to consider how these changes will influence not only litigation, but the legal principles themselves.

- **What do smart contracts mean for contracts law?** With smart contracts, the terms of the agreement are embedded in the software – this means the contract is performed instantly, once predetermined conditions are met. One area that lawyers should look for is any discrepancy between the terms of the contract and its execution by the software. To take one example from the financial sector, the CFTC has recently published a primer on the use of smart contracts for derivatives trading. As the regulator pointed out, the automatic performance of contracts isn't entirely new because automation has long been a feature of the financial markets, for example stop loss orders such as "if the price falls below $X, then sell at market." However, the CFTC suggests many potential smart contract use cases such as trade clearing and settlement, data reporting and recordkeeping, insurance and derivatives.

- **What does 3D printing mean for IP law?** The World Intellectual Property Organization noted the expiry of patents granted in the 1980s has prompted the manufacturing sector's interest in 3D printing technology. One of the main issues with this technology is that it makes it possible to copy almost any object, with or without the authorization of the person or company holding rights in that object.

- **What does distributed ledger technology mean for torts law?** How does one identify negligence and assign responsibility in a network which is, by definition, distributed? It is important here to consider the various degrees of control within the network, namely whether it is a public or permissioned network.

These are just some examples of how technological change is driving legal change. As the ability to create and enforce legal rights is weakened in some respects, it is important for the law to adapt and to promote the use of emerging technologies, and the growth of the technology sector.

Life Sciences

North Carolina's life sciences industry includes strong network of more than 700 life sciences companies, universities and a skilled workforce. The life sciences sector in North Carolina has been experiencing a period of growth; employment within the sector is reportedly growing at 6.6%, triple the national average as companies in the region expand and attract investment. North Carolina life science employment grew 42% between 2001 and 2016 – the fastest growth among peers with policies in place to attract life sciences companies. Pharmaceuticals make up two of the state's top three export products (medicaments and blood and related products). The value of these exports increased from $1.3 billion in 2013 to $2.6 billion in 2016, as medicaments increased 48%, and blood and related products gained 203%.

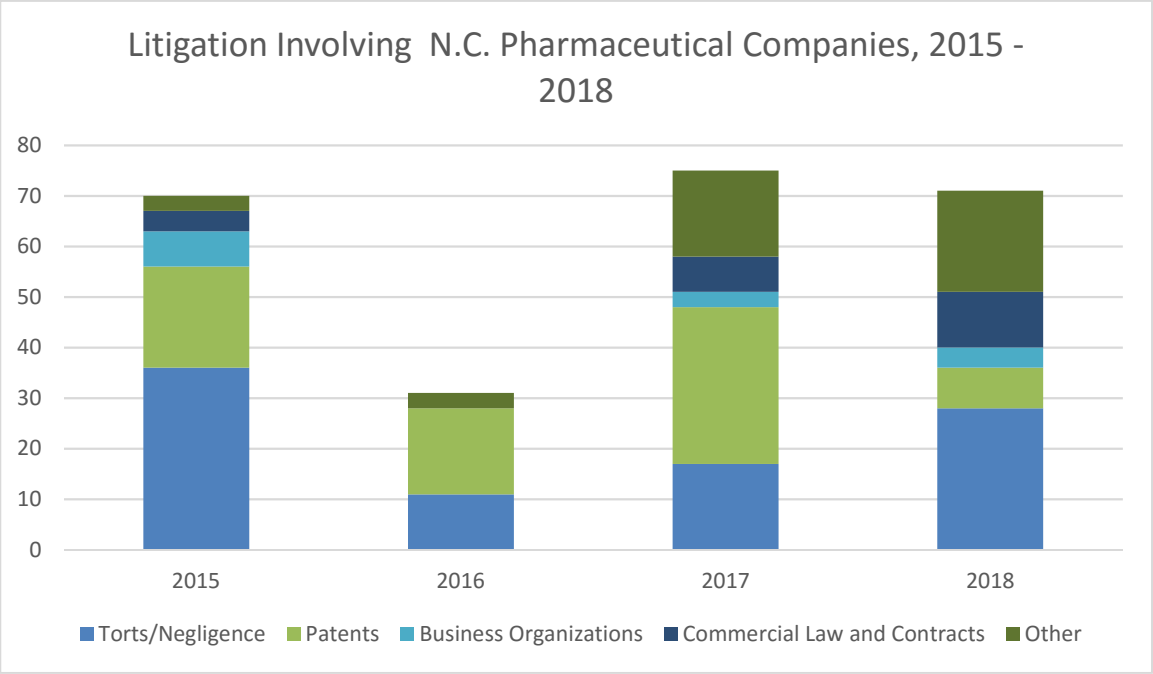
Recognized by industry group PhRMA as one of the top bioscience industry states, North Carolina is seen as providing a positive model for biopharmaceutical development. Development of the sector is lead by the North Carolina Biotechnology Center (NCBiotech), a state-chartered non-profit development organization that brings together government, industry, academia and other stakeholders. NCBiotech-funded companies generated $4.3 billion in economic activity in 2016, providing an estimated $73.6 million in state revenues – more than five times the tax revenue than the state's total appropriation for NCBiotech of $13.6 million. The state's success with this model of development has spurred other states such as Massachusetts to replicate the approach.

North Carolina Employment, Wages and Output in Life Sciences

	Pharmaceuticals	**Medical Devices**
Employment 2016	40,768	8,247
Change from 2011	46.4%	81.4%
Total Wages 2016 ($ Thousand)	$4, 316,746	$520,143
Change from 2001	138,4%	187.3%
Output 2014 ($ Billion)	$40,867	NA

Recreated from: Growing the Future: State Efforts to Advance the Life Sciences – ITIF

Several large pharmaceutical companies have outposts in the state, including Merck, Pfizer and Biogen. Novo Nordisk's $1.8 billion expansion in the state is the single largest manufacturing investment in state history. Seventy-one life sciences companies headquartered in 20 countries have a presence in the state. Despite attracting these outposts, however, these large pharmaceutical companies have not established headquarters in the state, which may explain why the companies in the state account for a small share of pharmaceutical litigation – just 0.2% – tracked by Monitor Suite. The state has an active startup scene in the life sciences sector, however. In 2016, 28.3% of technology-based startups in the state were involved in the life sciences industry – 48 in pharmaceuticals, 169 in medical devices and 1,218 in R&D services.



*As of November 20, 2018; Based on companies in N.C.
Source: Monitor Suite (Dockets only)

Pharmaceutical Patent Litigation – Forum shopping, the Philips Standard and Section 101

Between 1998 and 2012, North Carolina experienced a steady increase in the number of pharmaceutical (37%) patents granted by the USPTO. At the same time, the number of medical device patents has surged 273%. Despite this, Monitor Suite data indicates there's been a notable decline in patent litigation involving N.C.-based pharmaceutical companies in 2018, from a peak of 31 in 2017 to just eight as of November 2018.

Although patents account for 28.9% of pharmaceutical litigation involving N.C. companies over the past five years, patents account for only 7.2% of the pharmaceutical litigation heard before N.C. district courts. One reason for the small number of patents cases heard before these courts is forum shopping among litigants. The Supreme Court's TC Heartland ruling – which the Federal Circuit has said reflects a change in law – put limits on where patent suits can be filed. Following the ruling, the Districts of Delaware and New Jersey remain the favored venue for pharmaceutical patent cases. The Districts of Delaware has seen ANDA patent cases increase 60%, from 151 cases in 2016 to 241 cases in 2017, as many life sciences companies are incorporated in the state.

Also behind these numbers is an increasing reliance on the PTAB as a vehicle for challenging pharmaceutical patents. Generics makers have favored IPRs as a means of challenging branded drugmakers' patents, offering a supplementary approach to district courts. Generics makers have been successful in about 50% of cases and the IPR process has been viewed as meaningfully shifting the balance between patent holders and challengers. The board's recent adoption of the Phillips standard, which came into effect on November 13, could dampen the attractiveness of the venue as it brings the board's patent analysis in line with those used in district courts. However, the impact remains unclear and an analysis by Vanderbilt Law Review suggests the impact on validity decisions could be minimal.

The Mayo and Alice Supreme Court rulings on section 101 continue to be key to life sciences patent litigation. The USPTO is considering updating its guidance on what constitutes an unpatentable abstract idea. The office has issued new guidance on section 101 to its patent examiners, addressing the "conventionality" step in the Mayo and Alice framework and "methods of treatment" claims. Director Andrei Iancu has said data suggests the memos have already improved the 101 analysis during examination, but the understanding of "abstract ideas" remains a challenge. As a result, the office is considering reviewing guidance to categorize patentability exemptions and direct examiners on how to supply them.

Product liability – Multi-district litigation and generic liability

There's been a gradual increase in torts/negligence cases involving N.C.-based pharmaceutical companies since 2016, though levels have not reached those observed in 2015. Over the past five years, product liability has accounted for about half (50.8%) of torts/negligence cases involving N.C.-based pharmaceutical companies and slightly more than half (52.3%) of pharmaceutical torts/negligence cases before the N.C. district courts. This aligns with trends on a national level, as pharmaceutical litigation accounts for the bulk of product liability cases filed in district courts between 2009 to 2017.

Since January 2009, more than 289,200 product liability cases have been filed in district court. Multi-district litigation (MDL)-associated cases comprise more than 97% of medical device and pharmaceutical cases filed in 2017. The vast majority (97%) of cases involving pharmaceutical companies are settled procedurally, rather than on the merits of the case. Interestingly, defendants are successful in about 90% of cases decided on the merits.

In jurisdictions outside N.C., the industry has faced litigation related to pharmaceutical labels and liability, particularly whether brand-name drug makers can be held liable for claims made about the generic versions of their products. The California Supreme Court determined Novartis could be held liable for negligent misrepresentation and failure to warn of purported risks of a generic version of asthma medication Brethine, ruling liability doesn't end after the rights to a drug are sold. The West Virginia Supreme Court, meanwhile, has held that under state law a consumer can't bring failure-to-warn claims against the maker of a brand-name drug when a generics maker made the drug. As such, it held that brand manufacturers can't be held liable for failure to warn of another manufacturer's product.

State Policy, Cannabis Innovation in Life Sciences and Intellectual Property

With marijuana partially legalized in a majority of states in the U.S., a race is on to secure patent formulations on the product. Axim Biotechnologies, for instance, acquired a U.S patent for a cannabis-based suppository as a treatment for irritable bowel syndrome and GW Pharmaceuticals, which already developed a cannabis-based treatment for epilepsy, is pursuing patent protection for a cannabis-based treatment for eczema.

The USPTO has issued 39 patents containing the words cannabis or marijuana so far in 2018 – an increase over 29 in 2017 and just 14 in 2016. With its history as an illicit substance, the strength of cannabis-based patents haven't been challenged in significant legal battles. However, as legalization gains ground, we're beginning to see the emergence of cases to challenge these patents. As one of the world's fastest growing industries – projected to reach $75 billion in 2030 – the conditions are ripe for more patent challenges to cannabis-related patents.

Although North Carolina, as it stands, is unlikely to be a center of cannabis research and development, efforts to legalize the product could open it up to more cannabis-related development. This, paired with the state's biotech cluster and research institutions, could make the state a potential breeding ground for cannabis-related life sciences research, potentially fostering patent litigation as companies vie to protect their assets and discoveries.

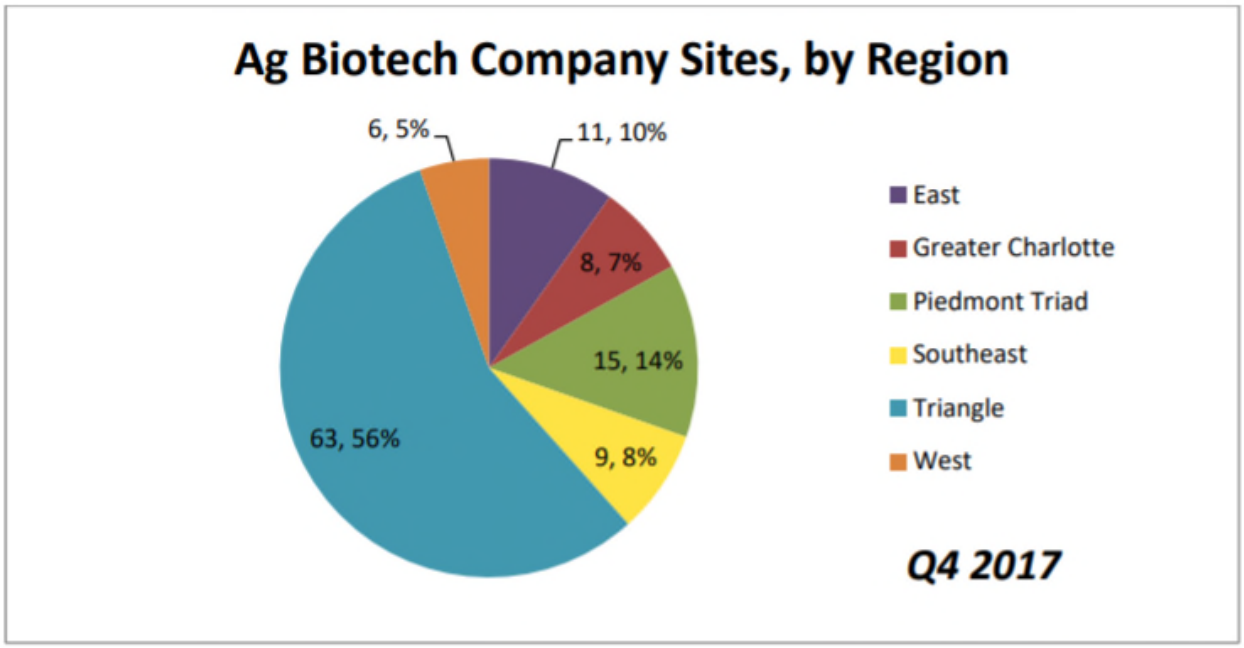
AgTech

Agriculture and agribusinesses are an $84-billion industry in North Carolina, contributing an estimated one-sixth of the state's income and employees, according to 2016 figures by NC State University economist Mike Walden. The state was home to 47,000 agriculture operations in 2017 and the state's agricultural industry provides over $10.6 billion in annual cash receipts to the state, ranking 9th in the U.S. in cash receipt and 6th for total farm income. Since 2010, the number of ag biotech employees has increased 19.7% in the state.

Farm operators in the state are starting to embrace new technologies to improve their yield and make their operations more sustainable and efficient. The agtech and agbio sectors are growing, with the North Carolina Biotechnology Center housing more than 80 agbio companies and several multinational companies such as BASF, Bayer[1] and Syngenta operating agbio business in the state. The Biotech Center launched an initiative in 2015 to grow the sector, bringing together two leading states in the sector – agriculture and biotechnology.

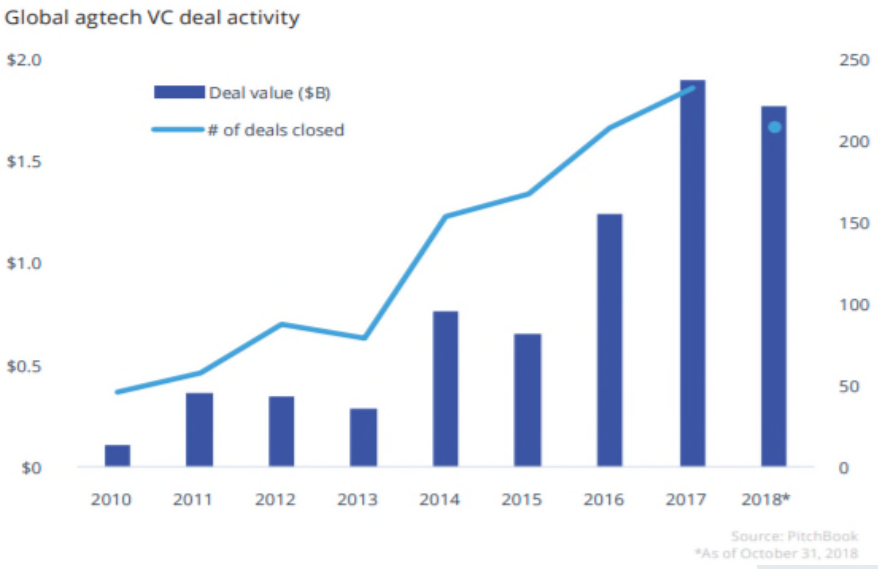
While the Research Triangle houses the majority of the state's agbio activity and, while agtech's footprint covers the entire state, is home to the AgTech Accelerator, a startup program trying to address funding gap in the sector. The accelerator started with $11.5 million in investment from global agribusiness companies and life science investors, which CEO John Dombrosky said could grow to more then $30 billion as new partners are added. The accelerator will feed into a burgeoning agtech startup sector, which is supported by research universities such as Duke, N.C. State – which is building a $160 million Plant Sciences Research Complex in the bid to become a leading R&D plant science program – and UNC-Chapel Hill.

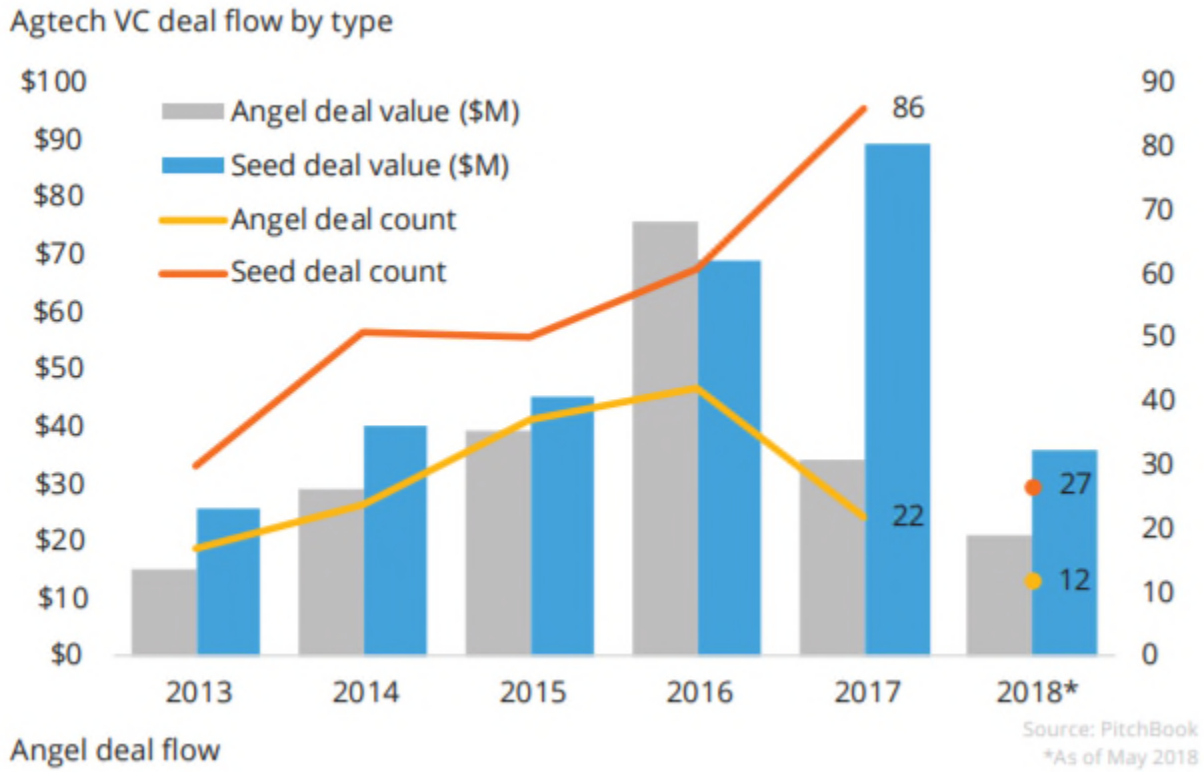
[1] In August 2018, BASF closed a $9-billion acquisition of businesses and assets from Bayer, moving four facilities and more than 360 former Bayer employees into its Research Triangle Park operations.



Transactions and shifting industry dynamics

The agtech investment landscape has grown from a niche investment capital investment class to a legitimate asset class. According to Finistere Ventures and Pitchbook, $6.7 billion has been invested in agtech in the past five years and $1.9 billion in the past year. As of October 2018, total capital invested had reached $1.6 billion across 2019 deals, with median deal sizes reaching $10 million at the late stage. Finistere Ventures and Pitchbook have also found that the early stage agtech sector is seeing increased activity, with $123.6 million across 108 angel and seed-stage rounds in 2017. the median round size at the angel & seed stage is (so far) above $1 million in 2018. The sector is seeing bigger round sizes, more notable VC-backed exists, an increased appetite for growth equity and more generalist firms getting involved. There's been an increase in the volume late-stage transactions as the industry matures.





According to CB Insights, agriculture companies and Silicon Valley venture capitalists are competing over agtech startup financing. In 2017, about 25% of agtech investments were made by large corporate or their venture capital arms, including those of Monsanto and Syngenta. Big ag are also acquiring outright and there are expectations that they will continue to spend as they look to keep pace with emerging technologies. This follows a wave of consolidation across the entire ag inputs sector. The sector may continue to see an increase in acquisitions and strategic dealmaking as farming becomes more data-intensive and industry dynamics shift with the rise of mega funds, entry of players such as Amazon and Google, and entry of other non-traditional players through partnerships and as potential acquirers. Companies are looking to scale and a more diverse group if investors are supporting these companies, with increased exit activity and traditional VC dollars entering the market.

Despite this growth in investment, however, there remains a relative lack of capital in agtech compared to tech and biotech investments, leaving many startups stalled and forcing startups to look beyond North Carolina and the Research Triangle for investors. N.C. companies are having to compete for funding as agtech mini-clusters and new fund investors emerge in regions such as Iowa, Missouri and Tennessee and as international startups branch into the U.S. -AgTech Accelerator CEO John Dombrosky predicts the sector will follow a similar path as biopharma, which generates a significant amount of revenue using "externally produced relationships."

Intellectual property – Patents and Trade Secrets

With startups springing to life, large businesses getting into the agtech space and investors pouring money into the market, intellectual property is becoming increasing important. Research points to the role

intellectual property rights, including patent rights, play in supporting innovative agricultural systems. In recognition of this, the United States-Mexico-Canada Agreement will provide a strengthened intellectual property system for agtech, creating a structure to protect patents, trademarks, data and trade secrets. With companies such as Walmart filing patents for agtech, the sector is ripe for legal patents over intellectual property. A USPTO search for "agriculture" shows 42,988 listed patents as of December 2018 and 41,157 applications. In line with this, the number of agriculture-related patents granted in N.C. each year has more than doubled since 2010.

Beyond patents, battles are already springing to life over agtech trade secrets. In May 2018, a federal judge in Nebraska dismissed claims that Farmobile, which sells an in-cab device for tractors that collects data to increase efficiency, misappropriated trade secrets. Farmers Edge filed suit in 2016 alleging Farmobile founders had stolen trade secrets and asked the court to assign Farmobile's patents to Farmers Edge. The Farmobile founders had worked for Crop Ventures, which was acquired by Farmers Edge in 2014. Zest Labs has filed suit against Wal Mart claiming it stole trade secrets for technology to extend shelf life and reduce food waste.

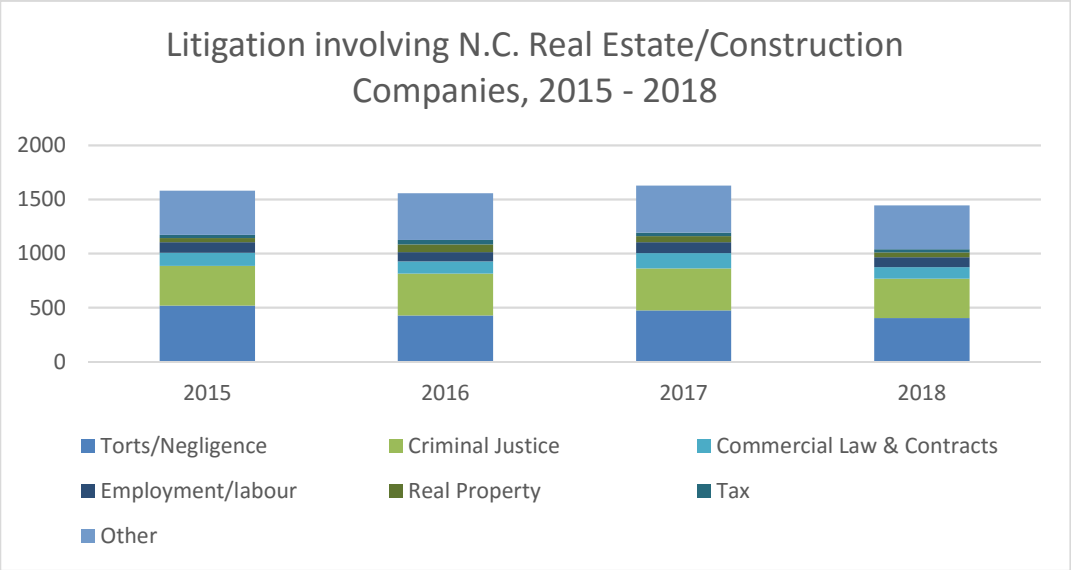
Technology and the Right to Repair

With agtech making agricultural equipment more and more advanced and high tech, battles have emerged in the U.S. over farmers rights to repair their equipment. At least 18 states in the U.S., including North Carolina, have sought to pass "right to repair" legislation to require companies to provide consumers and independent repair shops with access to service manuals, diagnostic tools and partners so they aren't restricted to a single supplier. Major tech companies such as Apple and Microsoft are pushing back against the legislation and efforts have stalled in states such as New York and Nebraska. However, pressure is growing to support the legislation.

Real Estate & Construction

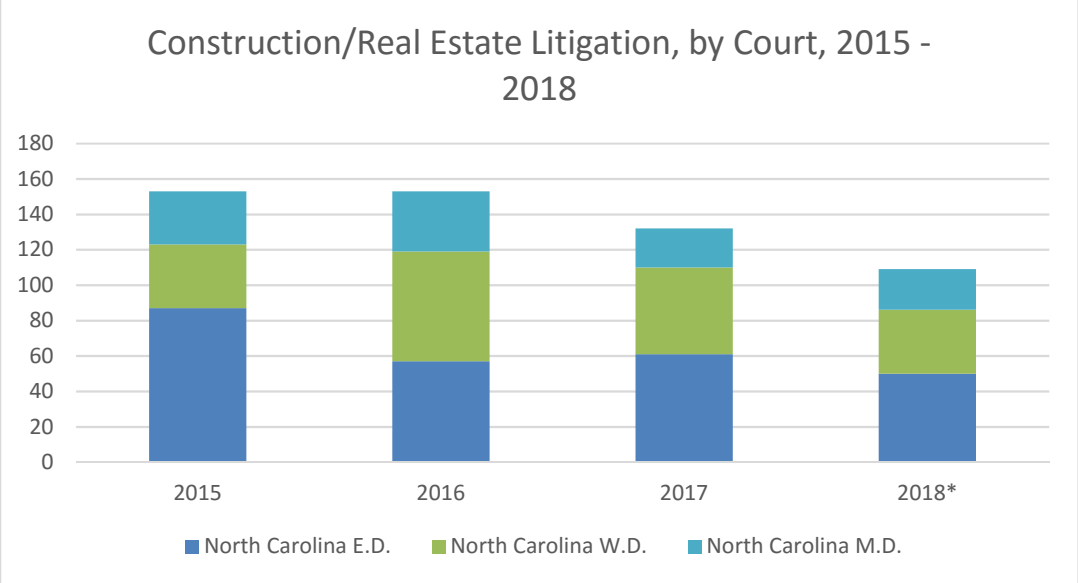
N.C.-based companies account for 2.7% of litigation against U.S. companies in the real estate and construction industries. Over the past five years on average, torts/negligence cases accounted for the biggest share (24.6%) of litigation involving these companies. Among these cases, nearly half (43.9%) were personal injury cases, while premises liability accounted for 11.2%, product liability accounted for 9.8% and mass tort accounted for 7.9%. Toxic torts accounted for only 0.2% of cases. Commercial law and contracts accounted for only 6.6% of cases over the same time period.

Overall, litigation involving N.C.-based real estate and construction companies has remained relatively stable since 2014, though 2018 appears to have less litigation than 2017.



*As of November 30, 2018; Based on companies in N.C.
Source: Monitor Suite (Dockets only)

N.C. federal district courts accounted for 0.2% of litigation in the construction and real estate industry over the past five years. Torts/negligence accounted for the largest share of cases (16.7%) involving the construction/real estate industry before these courts, followed closely by criminal justice (16.5%). Commercial law accounted for 13.3%, employment/labor for 12.6% and government 10.3%. Of the torts/negligence cases, personal injury accounted for more than half (58.9%) while mass tort accounted for 21.8% and product liability 18.5%.



*As of November 30, 2018
Source: Monitor Suite (Dockets only)

Skilled labor shortage, changing construction services lead to increased liability claims

Following the 2008 recession, some 2.6 million workers were laid off. Of these, 630,000 were in the construction sector. Although the economy recovered in the ensuing years, the skilled labor shortage persisted in the construction sector – particularly in regards to younger workers, as 21% of construction industry workers are currently age 55 or older, in contrast to the 9% of workers that are 24 or younger.

As a result of these demographic and economic factors, the Associated General Contractors of America reports that 78% of construction firms are having difficulty finding qualified workers. North Carolina is not immune to this trend, as construction firms in the state also struggle to fill positions.

This labor shortage creates unique risks for construction firms, specifically an increased risk of workplace injuries and long-tail construction defect claims. The Bureau of Labor Statistics reports that the construction sector has the largest number of worker fatalities than any other sector in the U.S. Here, too, North Carolina follows national trends as the construction sector accounts for the largest number of workplace fatalities.

Another trend to watch in relation to construction liability claims is the increasingly blurred boundary between design and contracting. The tendency toward design/build methodologies now requires more caution on the part of consultants that are not only liable for their own services, but also potentially that of their subconsultants.

Climate change, construction code amendments might lead to more claims

The International Association of Insurance Supervisors (IAIS) recently issued a paper on the climate change risks to the insurance sector. In this paper, the IAIS called on the insurance sector to intensify its scrutiny of climate change risks, due to challenges posed by extreme weather events. Similarly, the construction industry should be aware that increasingly strong storms might impact the number of liability claims.

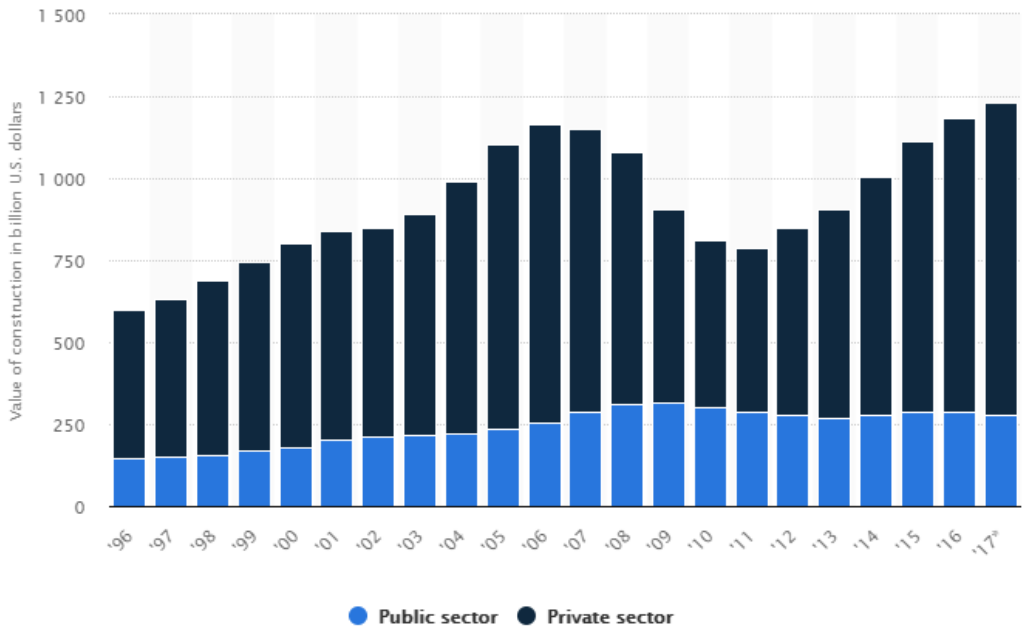
In 2013, North Carolina reportedly weakened its building codes, in conjunction with other states. The legislature increased the amount of time between updates to its building code from three years to six. When hurricane Florence struck earlier this year, new standards for elevating the floors in flood-prone homes weren't in effect. In fact, the change means the state residential code will always be one or two cycles behind the latest national model codes.

In 2015, state regulators also eliminated a requirement that storm shutters be permanently anchored. The move was criticized by the Insurance Institute for Business & Home Safety (IBHS), while it lowered the state's score in an assessment of building codes in hurricane-prone states. The IBHS noted the amendment "makes it less likely that wood structural panel opening protections will be adequately anchored in coastal windborne debris regions." It recommended that N.C. reinstate regular updates of the code every three years, and suggested the state require continuing education for licensed plumbing and mechanical contractors, as well as institute licensing requirements for roofing contractors.

If enacted, these recommendations might reduce the number of insurance claims and construction liability claims in the state, as they would enforce better construction standards. Although up-front costs would be higher in the construction sector, these could prevent potentially costly litigation in the future, while responding to the risk of increasingly dramatic weather events.

Bigger projects lead to bigger liability

Demand in the construction sector has been steadily increasing in the years following the 2008 recession:



Source: Statista, Construction spending in the United States from 1996 to 2017, by sector (in billion U.S. dollars)

Additionally, the total value of new private construction in the U.S. has increased by approximately 80% from 2011 to 2016. This increasing demand places pressure on contractors, to accept larger projects. However, overextension ranks first among the reasons why contractors fail, at 37%. This is closely followed by performance issues (such as inexperience with new types of work) at 36%.

Given the current volume and size of construction work, underwriters are increasingly hesitant to take on more risk. In addition, the regulatory requirements for surety now result in higher barriers to entry for this sector. For lawyers and insurers alike, taking on one billion-dollar case is very different than taking on ten cases worth $100 million, as firms that take on larger cases are accepting more risk.