thoughts



JULY 2025

Finance can be entertaining even without explosions...

The recent release of Ben Affleck's *The Accountant 2* along with its predecessor are among the few exceptions to my belief that films that deal with finance focus primarily on times of turmoil or excess. While *The Accountant* franchise twists the relatively staid world of forensic accounting into a dangerous and exciting plot, most films about finance hew closer to reality with fewer to no guns and explosions. Despite the lack of fireworks, there are more than a few compelling finance movies that could provide a welcome respite from the usual summer blockbuster fare featuring superheroes and dinosaurs.

Below are three of my favorite "palate cleansers" from the last 25 years along with a few honorable mentions. The viewing details are from JustWatch as of July 9, 2025, for viewers in the U.S. All of the films are available to rent or buy on Apple TV, Amazon Video, and other online stores.

Margin Call (2011) – My favorite finance film and arguably the best movie based on the 2008 global financial crisis, *Margin Call*, focuses on the collapse of the mortgage-backed securities (MBS) market that kicked off the crisis. The movie covers a two-day period at a fictional investment bank where an analyst's discovery of the bank's overexposure to the MBS market turns management and its strategy upside down. The film's ensemble cast is top-notch with great performances from Paul Bettany, Jeremy Irons, and Demi Moore. Despite being dialogue-driven and filled with meetings, Margin Call is a tense examination of high finance and the tolls it extracts from all of its participants. Available to stream for free with ads on Plex or for free on Kanopy and Hoopla with a participating public library membership.

The Big Short (2015) - Probably



Source: Alamy.com

the most famous and viewed movie about the global financial crisis, *The Big Short* also revolves around the MBS market but from the side of the traders that benefited from its collapse. Based upon Micheal Lewis's book of the same name, the movie does a great job of making complex topics accessible and is genuinely funny, a rarity in the genre. Though the treatment of the main characters veers a little too far towards hero worship, it is still worth watching this Oscar-winning film featuring Brad Pitt, Steve Carrell, and Christian Bale. Available to stream on Hoopla.

Boiler Room (2000) – Instead of dealing with the global financial crisis, *Boiler Room* centers around a more prosaic and common finance problem – pump-and-dump stock scams. The movie provides an inside look at not only the firms

and the people that run the scams but also the costs they impose on clients and others caught up in their wake. Starring a number of young actors at the start of their long careers (Vin Diesel, Giovanni Ribisi, and Ben Affleck), *Boiler Room* nails the atmosphere, camaraderie, and ultimately, emptiness, of a high-pressure financial sales culture. Unlike *TheWolf of Wall Street*, the film doesn't glorify the con man at the heart of the scam, which makes it more palatable. Available to stream on Kanopy or for free with ads on Plex.

Honorable mentions

The Wolf of Wall Street (2013) – A well-made and fun-to-watch Scorsese film about one of the kings of pump-anddump stock scams that ends up falling into the hero worship trap. Streaming on Paramount+, Kanopy, and Hoopla.

Enron: The Smartest Guys in the Room (2005) – A great documentary about the energy company that acted more like a crooked investment scheme. Streaming on Prime Video, Kanopy, and Hoopla and for free with ads on Plex and the Roku Channel.

- Neil Macker



Hanson+Doremus Investment Management is a registered investment advisor offering integrated investment management and financial planning to individuals, businesses, and nonprofits. It was founded in 1995 and is regulated by the U.S. Securities Exchange Commission.

©2025 Hanson & Doremus Investment Management

802.658.2668 hansondoremus.com

431 Pine Street, Suite 302 Burlington, Vermont 05401

"Artificial intelligence is going to replace literally half of all white-collar workers in the U.S." ...

- Ford Motor Chief Executive, Jim Farley

The idea that we can create machines that rival what we do as humans is scary stuff. We are not discussing factory robots which do repetitive things, day after day without ever getting tired. We are talking about machines which simulate human intelligence, machines which can actually learn, reason and problem solve. And then you have the next level of AI, Artificial General Intelligence (AGI), where machines are the equal of humans. And let's not even get into Artificial Superintelligence (ASI), where machines might be capable of surpassing humans!

The AI debate involves both philosophical and practical issues. On the philosophical level, you have those who see a future utopia, arguing that AI will be able to solve difficult human problems. On the everyday level, you have those who worry that if AI is not successfully controlled, machines could destroy everything.

On a practical level, everyone wants to know which jobs are in jeopardy from AI, and when the losses will occur. Unfortunately, it is still too early to tell. It is important to remember, however, when computers first came along, the idea was that productivity would soar, and far fewer people would be needed to do all the work. It is true that computers have changed the job market (and the skill sets involved), but the employment market has adjusted, and the overall number of jobs has continued to grow. The same may happen with AI. The job market will change but total employment will increase.

It is unclear in Mr. Farley's quote what

WHERE WE WORK



United States, employment by sector, % of total

Source: "Behind the curve: can manufacturing still provide inclusive growth?", by R.Z. Lawrence, 2024; *The Economist*

he means by 'white collar' and which jobs he specifically sees as being most vulnerable. It's fair to say, however, that entry level jobs will probably be the first to go. Data entry jobs, call centers, basic HR functions, bookkeepers, administrative assistants, and heaven forbid, some financial analysts may be on the cutting block.

But at the same time, there will be winners. New technologies always create new jobs. Robotics maintenance and AI development will require many trained people. I have always been an enthusiastic fan of employees who have excellent people skills. Being able to listen well and display emotional intelligence and empathy are human talents that machines will find difficult to replicate. It is hard to imagine that health care professionals (doctors, nurses, dentists, and dental assistants), mental health professionals, and those in highly skilled client-facing jobs will be replaced by machines anytime soon.

THE ACADEMIC PAYOFF

United States, manufacturing employment by education, % of total



Sources: Economic Policy Institute, Current Population Survey Extracts; The ${\it Economist}$

In retirement, my wife and I moved from a city condo with municipal water and sewer to a rural home where we learned, often painfully, how sewer and septic systems work, how to ensure you have a reliable and clean source of water, and what is needed to get internet service. In effect, we have learned the value and importance of those in the skilled trades. Carpenters, electricians, solarpanel installers, maintenance and repair technicians, HVAC workers, you name it, these are jobs with decent pay, strong demand, and with the added benefit that you can go anywhere in the country and still be easily employed. Young people should not rule these out. One last area of job opportunities is one you would not expect. I am talking about manufacturing. The Bureau of Labor Statistics estimates there are 400,000 unfilled manufacturing jobs in America today. These jobs have been difficult to fill. One factor is that many workers don't want to give up

> the relative comfort of the service sector for the factory floor. Another factor is that manufacturing is not about brute muscle anymore. The factory floor is automated, and sophisticated skills training is important. As a country we are lagging in this area. AI will bring pain to the job market but also many opportunities. All is not lost that is in peril.

By Anne Doremus

TRANSPORTATION

News from the driver's seat...

The U.S. continues to have one of the highest car ownership rates in the world with approximately 90% of Americans owning at least one car and almost 25% owning three or more. A range of factors including high urban home prices, the nation's dispersed geography, and underfunded public transit systems have all contributed to the automobile's vital role in our lives. But two recent developments, road congestion pricing and driverless vehicles, may signal a shift in Americans' transportation habits.

Americans have always had something of a love-hate relationship with their cars. For most, car ownership has been both a practical necessity and something of a rite of passage, offering keys to independence. But these benefits come with some significant downsides. First, while owning a car has always been expensive, that is particularly true today. Higher material and labor costs combined with more advanced technologies have pushed average new vehicle prices up approximately 60% over the past decade to just under \$49,000. These same forces have also contributed to higher annual carrying costs for things like insurance, maintenance, and repair. The U.S. Department of Energy reports that the average U.S. household spent almost \$10,000, or 16% of all expenditures, on transportation in 2020 - most of this related to car ownership.

Rising road congestion also continues to plague drivers. Average one-way commute times have risen steadily over the years reaching a peak of 28 minutes in 2019. The COVID-related shift to remote work caused a temporary decline but by 2022, commuting times were once again increasing and now they sit right below their earlier peak.

Two recent developments could provide some relief to road-weary commuters. The first is the roll-out of a congestion pricing scheme in New York City. The program, which charges drivers a \$9 fee for entering Manhattan's central business district (below 60th street), was introduced in January after several years of delay. While some business owners have reported a negative impact to sales, the program has so far largely been seen as a success. Traffic speeds in key commuting lanes and public transportation rates are up meaningfully while congestion and accident rates have fallen. The program is expected to generate \$500 million in its first year of operation which the city will reinvest in its long-ailing transit system. New York's early success with the program builds on that of other major cities like London, Singapore and Stockholm and could speed adoption by other U.S. cities experiencing similar transportation challenges.

Robotaxis, or driverless ride-hailing vehicles, could also transform the commuting experience. While the component technologies have been under development for years (AI, LiDAR, cameras), the first public, fully driverless robotaxi service was not launched until 2018 when Waymo entered the Phoenix market. A wide range of global companies have entered the race since then. In the U.S., "first-mover" Waymo continues to dominate. By early 2025, the firm had a fleet of approximately 1,500 vehicles offering 200,000 rides each week across six U.S. cities.

Coming from behind, Tesla has also very publicly entered the game by just launching its initial service in Austin. Several Chinese companies are quickly gaining technological capability and scale. Baidu's Apollo Go leads in China where competitors WeRide and Pony.ai are also quickly expanding. Although much smaller in scale, VW appears to be leading the effort in Europe. All have global ambitions (see the table)

ambitions (see the table).

While profitability remains elusive in the robotaxi industry, the business bears watching. Many of the obstacles plaguing the industry to date (uncertain safety, inflated costs, clunky technology) are starting to fall and consumer acceptance is slowly gaining steam. Still, the path forward is likely to be bumpy. Clearer and more consistent regulations around issues like safety and liability are needed, and infrastructure investments - particularly in charging stations and vehicle communication systems - continue to lag. But the business has come a long way over the past ten years. In five to ten more, the correct title for this article might well be "News from the passenger seat"!

LEADING GLOBAL ROBOTAXI COMPANIES

| | Apollo Go | WeRide | Pony.ai | Waymo | Tesla |
|-----------------------------|---------------------|--|----------------------------------|----------------------|--|
| Fleet Size | Over 1,000 | 1,200 (includes buses, vans, sweepers) | 300 | 1,500 | Goal: 10 to start, 1,000 within months |
| Rides Completed | 11 million | 350,000+ | 28 million miles | 10 million | N/A |
| Domestic Testing Cities | 10+ cities in China | 5 cities in China | 4 cities in China | 4 cities in the U.S. | Test rides in Austin |
| Overseas Testing Permits | Hong Kong, UAE | UAE, France, Singapore, U.S. | U.S., Luxembourg, South Korea | Tokyo | None |
| Ownership | Baidu | Public NASDAQ: WRD | Public NASDAQ: PONY | Alphabet, Inc. | Public |
| Founded In | 2013 | 2017 | 2016 | 2009 | 2016 |

Source: Rest of World, company press releases, company websites, company comments, CNBC, South China Morning Post, Caijing, IPO documentation, City of Guangzhou

EDUCATION The artificially intelligent classroom?...

Generative artificial intelligence (GenAl) is becoming widespread, and education is already feeling its impact. The technology will, without a doubt, have broad implications for how we acquire learning and educate our children and the workforce.

First, the good: AI can be a huge boon to efficiency. A 2022 survey conducted by Merrimack College found that teachers spend half their time on non-teaching tasks like grading, planning, communicating with parents, professional development, and school committee work. Commonly used GenAI tools like OpenAI's ChatGPT and Google's Gemini can help create lesson plans, practice problems, and classroom activities in minutes, and it is easy to imagine other potential benefits.

Squirrel Ai, for example, creates personalized, data-driven lesson plans by combining teacher-designed curricula with AI algorithms—hopefully providing a more engaging and effective learning experience. Magic School allows students to have simulated conversations with historical figures, and MATHia focuses on providing each student with a personalized one-on-one coach. These tools already serve millions of students.

But there is also a dark side. Cheating and how it damages learning—remains a big concern. Students use AI to draft essays, prepare book reports, and solve math problems. Cheating has always existed, but AI has changed the game and made it more difficult for educators to ensure that students are actually learning. While software like Turnitin, which assesses if text has been written by GenAI, is useful, it may not be a long-term solution. Teachers also have raised valid concerns that surveillance-based AI monitoring systems can contribute to distrust between teachers and students and strain relationships.

And the problem might just be AI tools in general. A recent study from Gallup surveyed K-12 teachers and found negative

WOULD INCREASE, DECREASE, OR HAVE NO EFFECT ON ... Skill/Aspect Difference Increase Decrease 57% Independent Thinking 13% -45% -39% Meaningful Relationships 6% 46% Critical Thinking 15% 52% -37% Resilience 14% -31% 45% 19% 45% -26% Problem Solving Negative Effect 41% -24% Collaboration 17% Communication 20% 41% -22% -19% Writing Skills 20% 39% 39% Creativity 22% -17% Preparedness for College 29% 30% -2% 22% Test Scores 21% -1% Positive Effect Preparedness for Workplace 30% 26% 5% 26% 8% Engagement in Class 33% Subject Proficiency 28% 19% 9% Pace of Learning 28% 9% 19% 32% 10% 23% Grades

IF YOUR STUDENTS USED AI TOOLS AT LEAST WEEKLY, DO YOU THINK IT

Source: Gallup, Walton Family Foundation, survey of 2,000+ k-12 educators

Phase remember that past performance may not be indicative of future results. Different types of investments involve varying degrees of risk, and there can be no accurance that the future performance of any specific investment, investment strategy, or product (including the investment strategy) or product varying degrees of risk, and there can be no accurance that the future performance of any specific investment, investment strategy, or product or indivading the investment strategy, or product or indivading the performance of any specific investment integes recommended or undertacken by Hanson-Poorena. Investment Management ("Hanson-Poorenac"), or any non-investment related content, made reference to directly or indirectly in this newsletter will be profitable, equal any corresponding indived by and provide the second or performance of the provident direct of correst opticals. One row resuscident will be notificable and provide the second or applicable future of correst opticable, equal any corresponding on the second and or applicable future. The other performance of any specific investment advises from Hanson +Dorenne. The the extended that any discussion or information contained on the previous equations or positions. (Norveer, you should not assume that any discussion advisor of bits in the individual instantion, bits investment advises from Hanson +Dorennes. To the extent that a rater bat any quections regarding the applicability of any specific issue discussed advisor of bits in the advised instantion, bits in exameltary instantion discussion advisor of bits in the individual instantion. The strates and the second method on a correst possible construct advise from Hanson +Dorennes. To the extent that a partier, may quections regarding the applicability of any specific issue discussed advisor of bits in endividual instantion, bits in examination advisor advisory advisor advisor advisor and advisor and extension advisor advisor



views about the impact AI has on a host of student skills, including independent and critical thinking, creativity, writing, and problem solving (*see table below*). To highlight one particularly dismal outlook, 46% of teachers believe AI tools will decrease students' ability to build meaningful relationships, with just 6% believing AI will help not good in a society already struggling with social isolation. AI was generally regarded as having a positive effect on grades and the pace of learning, and neutral on college prep and test scores.

Whatever its impact, as GenAI becomes more a part of our lives, the focus may need to be less on policing its use and more on understanding and embracing its ability to improve how we learn and become productive in our careers and society. Communication will be key. MIT Sloan School of Management has offered some suggestions, including setting clear policies and expectations, defining plagiarism and cheating within the context of GenAI, promoting transparency and dialogue, fostering intrinsic motivation, and ensuring inclusive teaching. While those suggestions are helpful, schools have found designing and adopting AI policies difficult and many still lack clear guidance. Much work remains to be done.

Despite all of this, the use of AI in education will surely continue to expand. OpenAI and Microsoft just announced a \$23 million investment in AI training for teachers, and a recent executive order promotes "Advancing Artificial Intelligence Education For American Youth" with over 60 organizations pledging support. We cannot discount the possibility that effective teaching of GenAI tools will prove important in positioning students for future success in the workplace. But the balance between genuine comprehension and knowledge aided by AI versus total reliance on AI will be important to get right.