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Star Power and Risk. A Political Economic Study of Casting Trends in Hollywood

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WORKING PAPERS ON
CAPITAL AS POWER

No. 2022/01

Star power and risk

A political economic study of casting trends in Hollywood

James McMahon

January 2022

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WORKING PAPER
Star power and risk: A political economic study of casting trends in Hollywood

James McMahon

3rd January 2022

Abstract

This paper builds an empirical and theoretical model to analyze how the financial goal of risk reduction changed the insides of Hollywood's star system. For the moviegoer looking at Hollywood cinema from the outside, the function of the star system has remained the same since the 1920s: to have recognizable actors attract large audiences to Hollywood's biggest and most expensive productions. The composition of this system is, however, sensitive to many historical changes in the business and culture of cinema.

If the evolution of Hollywood's star system is shaped by broader social factors, risk reduction would be a key factor after 1980. This paper uses Internet Movie Database (IMDb) casting data to analyze how the star system was a factor in this period of risk reduction. Film casting assists risk reduction when a star system is built on controlled repetition. Repetitive casting – choosing the same people to star in a series of films – is a form of control because repetitive selection is the inequality of opportunity by another name: if an in-group is internally repetitive when alternatives exist, an out-group is repeatedly excluded.

There are two key conclusions to the analysis of the IMDb dataset. First, casting repetitiveness/inequality in the blockbuster era of Hollywood (1980-present) is low compared to Hollywood's "classical" studio system (1930-1948). Second, the historically low repetitiveness/inequality can be misleading if we ignore sector characteristics such as firm size and level of theatrical distribution. While it appears there are fewer barriers to being cast in *any* American film, a long career in blockbuster Hollywood is still reserved for Hollywood's elite. Within the top-tier, whether measured by size of distributor or number of opening theatres in theatrical release, Hollywood relies on repetitive casting. Conversely, the actors excluded from the top tiers of Hollywood cinema are finding their on-screen careers to be increasingly precarious.

As this attempt at risk reduction is driven by the largest firms in Hollywood, the theoretical part of this paper will identify the role of capitalist power in the formation of a star system. Capitalist power, in this case, is

defined as the ability of Hollywood to control everything from the industrial production of films to the broader social relations of cinema. This control is never absolute, but the role of capitalist power in the star system has a key purpose: to make sure that casting decisions are complementary to business interests.

1 Introduction

This paper builds an empirical and theoretical model to analyze how the financial goal of risk reduction changed the insides of Hollywood's star system. For the moviegoer looking at Hollywood cinema from the outside, the function of the star system has remained the same since the 1920s: to have recognizable actors attract large audiences to Hollywood's biggest and most expensive productions. The composition of this system is, however, sensitive to many historical changes in the business and culture of cinema. From year to year or film to film, there is neither a stable set of movie stars, nor a timeless logic for deciding how one should cast some actors over others. So how do Hollywood insiders make these decisions?

If the evolution of Hollywood's star system is shaped by broader social factors, risk reduction would be a key factor after 1980. The financial history of Hollywood shows a systemic process of risk reduction that began in the early 1980s and continues into the present (McMahon, 2013b, 2019). In particular, Hollywood studios have made the wide-release strategy (a.k.a., saturation booking) more predictable through an aggressive implementation of the blockbuster style and the high concept standard (Wyatt, 1994).

This paper uses Internet Movie Database (IMDb) casting data to analyze how the star system was a factor in this period of risk reduction. Film casting assists risk reduction when a star system is built on controlled repetition. Repetitive casting – choosing the same people to star in a series of films – is a form of control because repetitive selection is the inequality of opportunity by another name: if an in-group is internally repetitive when alternatives exist, an out-group is repeatedly excluded.

There are two key conclusions to the analysis of the IMDb dataset. First, casting repetitiveness/inequality in the blockbuster era of Hollywood (1980-present) is low compared to Hollywood's "classical" studio system (1930-1948). High repetitiveness/inequality during the first half of the twentieth century is consistent with existing research on the studio system; during the studio system, Hollywood had, among other strategies, a preference to cast people on multi-year contracts (Schatz, 2010). Second, the historically low repetitiveness/inequality can be misleading if we ignore sector characteristics such as firm size and level of theatrical distribution. While it appears there are fewer barriers to being cast in *any* American film, a long career in blockbuster Hollywood is still reserved for Hollywood's elite. Within the top-tier, whether measured by size of distributor or number of opening theatres in theatrical release, Hollywood relies on repetitive casting. Conversely, the actors excluded from the top tiers of Hollywood

cinema are finding their on-screen careers to be increasingly precarious.

Some variability in casting is needed, but the targeted increase in repetitive casting appears to be a symptom of major film distributors trying to reduce volatility and increase the predictability of their biggest film projects. As this attempt at risk reduction is driven by the largest firms in Hollywood, the theoretical part of this paper will identify the role of capitalist power in the formation of a star system. Capitalist power, in this case, is defined as the ability of Hollywood to control everything from the industrial production of films to the broader social relations of cinema (McMahon, 2015; Nitzan & Bichler, 2009). This control is never absolute, but the role of capitalist power in the star system has a key purpose: to make sure that casting decisions are complementary to business interests. Thus, executives, managers and high-ranking producers are tasked with preventing casting decisions in Hollywood from being random or misguided in terms of profit expectations. We can enumerate two key factors in the mode of control:

1. *People inside Hollywood (studio execs, producers, agents, directors, public relations, etc.) work to shape Hollywood's star system according to access (who can be a star and who cannot) and population (how many stars are too many?). Vested interests in Hollywood have no desire to let stardom organically grow from fandom – even if stardom needs fandom.*

2. *Casting decisions do not always have predictable effects (revenues, favorable reviews, awards, etc.), but the repeated use of a person is a choice to elevate this person over others (who only have a few jobs or none at all). Once chosen to be used repeatedly, the elevated person is building a theatrical film career, which is a step to building star power.*

2 Data preparation

2.1 Cast lists

A dataset of film casting was produced with IMDb data, accessed through the IMDb API with Python code. I downloaded cast lists for 79,423 films, each released some time between 1930 to 2020. Each cast list was limited to the first 20 people listed. With respect to someone having enough dialogue or screen-time for their roles to be memorable, a Hollywood film is rarely twenty people deep. However, a long list of actors/actresses can achieve two things at once. First, it can account for the possibility that a celebrity is unexpectedly lower on IMDb's cast list. Morgan Freeman's role in *Batman Begins* is a good example. In Table 1 Morgan Freeman is 12th on the list. There could be many reasons why he is 12th on the list, but his cameo-like role in the film would have been excluded with more a selective slice of IMDb data. Second, a lengthier list of actors gives us data to investigate if repetition in casting occurs further down the list, with people who are not stars in the public's mind but who have secured roles in a Hollywood film. For instance, Table 1 includes actors with smaller

speaking roles in *Batman Begins*: Mark Boone Junior as Arnold Flass, Linus Roache as Thomas Wayne, Larry Holden as district attorney Carl Finch, Colin McFarlane as Gillian B. Loeb, and Emma Lockhart as Young Rachel Dawes.

Table 1: Example of casting data from IMDb

Year	Title	Title ID	Actor	Actor ID
2005	Batman Begins	372784	Christian Bale	288
2005	Batman Begins	372784	Michael Caine	323
2005	Batman Begins	372784	Liam Neeson	553
2005	Batman Begins	372784	Katie Holmes	5017
2005	Batman Begins	372784	Gary Oldman	198
2005	Batman Begins	372784	Cillian Murphy	614165
2005	Batman Begins	372784	Tom Wilkinson	929489
2005	Batman Begins	372784	Rutger Hauer	442
2005	Batman Begins	372784	Ken Watanabe	913822
2005	Batman Begins	372784	Mark Boone Junior	95478
2005	Batman Begins	372784	Linus Roache	730070
2005	Batman Begins	372784	Morgan Freeman	151
2005	Batman Begins	372784	Larry Holden	390227
2005	Batman Begins	372784	Gerard Murphy	614283
2005	Batman Begins	372784	Colin McFarlane	568801
2005	Batman Begins	372784	Sara Stewart	829815
2005	Batman Begins	372784	Gus Lewis	1600560
2005	Batman Begins	372784	Richard Brake	104114
2005	Batman Begins	372784	Rade Serbedzija	784884
2005	Batman Begins	372784	Emma Lockhart	1439087

2.2 Actor, as a category of people

Throughout the paper, the use of "actor" as a single noun signifies any person who, regardless of gender, was cast to act in an American motion picture. For the purposes of performing a gender-based analysis future research, I will be using the compound nouns of "male actor" and "female actor". The gender-based analysis can be built with meta-data in the IMDb dataset.

2.3 Widest releases

The website boxofficemojo.com provides variable types to help us look at the evidence of casting repetitiveness/inequality. The website's opening theatre data from 1983 to 2019 is used to analyse casting trends in wide-released films. In this realm of Hollywood cinema, where budgets are big, advertising dollars are spent, and actors have lengthy promotional tours in magazines and television, career building – giving an actor a leading role in a wide-release film – is a

step towards star building – giving an actor a leading role in one of the widest-released films per year.

For each year from 1983 to 2019, I filter US theatrical releases with opening-theatre ranks above the 50th percentile. This approach for selecting films is slightly different than selecting films by gross revenue, but the method is related to the risk perceptions of developing film projects to be blockbuster hits (McMahon, 2013b). Saturation booking – the strategy to open a film in as many theatres as possible – is not applied to every film. The Hollywood film business decides, on the basis of what it thinks will be popular, which films will follow a saturation-booking strategy. The tiered exhibition system of classical Hollywood may be no more (e.g., film completes exhibition in "first-run" theatres before going to "second-run" and so on (Waterman, 2005)), but some contemporary films will still only get "platform" releases, which means they will open in a small number of theatres, usually in select cities (New York, Los Angeles, etc.).

Figure 1 plots the average number of opening theatres across various percentile thresholds. For example, at the threshold of 0.70, the figure is measuring the average number of opening theatres for films above the 70th percentile in their year of release. The figure visualizes a key historical change in the saturation booking strategy (McMahon, 2019). The average number of opening theatres for films in the top decile – i.e., the major blockbusters we are all familiar with – has grown with very little slowdown. Films between the 50th and 80th percentiles have not had the same growth trajectory. Their opening-theatre sizes increased in the 1990s but in the 2000s and 2010s they either shrank or stagnated.

2.4 Hollywood films, when they first appear

The main focus of this paper is casting in Hollywood films. Creating a dataset of only Hollywood films can be done, but it requires decisions about what is included and what is not. For example, as Hollywood broadens its international reach (Hozic, 2001; Miller, Govil, McMurria, Maxwell, & Wang, 2005), the American core of Hollywood film production is diluted with location shooting and tax incentives outside the United States (Epstein, 2010; Gleich & Webb, 2019). This paper took a "naive" approach in its first step to narrowing down to a set of Hollywood films. A film was removed if the United States was not listed in its IMDb information.

Hollywood, as a system of film production and distribution, is easier to define at its core than its periphery (Scott, 2004). The periphery of Hollywood is populated with small firms that are independent but that might also have personal or creative connections with a major studio. IMDb can blur the definition of "Hollywood" with variances in data entry. For instance, if I wanted to count all of the "20th Century Fox" films in IMDb, a naive count would not include films that have distributors such as "20th Century Fox Argentina", "20th Century Fox Brazil", and "20th Century Fox India". Films with these distributors are Hollywood films but the international release preceded the American release –

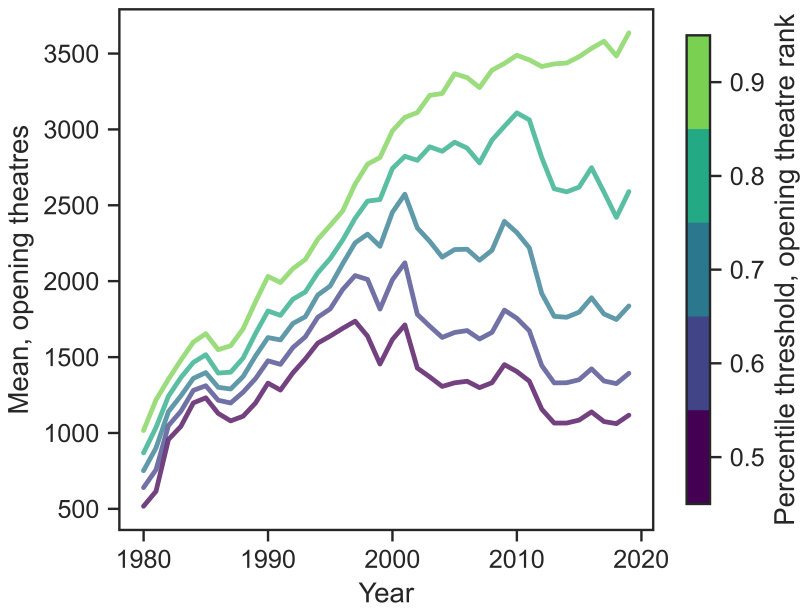

Figure 1: *Opening-theatre count by year, films above the 50th percentile of opening theatres, 1983-2019*

Source:boxofficemojo.com.

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and what is the data manger of IMDb to do? To narrow down from American films to Hollywood films, I developed a list of Hollywood film distributors by searching for film studios that are frequently cited in histories of Hollywood cinema (Balio, 1993; Bordwell, 2006; Maltby, 2003; Prince, 2000; Wasko, 1982, 2003). I then ran Python code to find variants of names that differ in spelling or added words. In sum, we have 183 film distributors from 1930 to 2019. An appendix lists all of the names alphabetically.

There are a few cases of films being re-released between 1983 and 2019. *The Polar Express*, for instance, was originally released in 2004 and then re-released six times between 2005 and 2012. Consequently, for each film, I only take the first year of a film's appearance. In the rare case where a film is re-released in the same year – e.g., *Dunkirk* – I take its widest release by opening theatres.

2.5 Repetitiveness/inequality in windows of data

To see if repetitiveness of casting has changed over time, a measure of repetition is built from windows of data. Ten-year or five-year windows of casting data are created first and then the film count is computed for each person. This avoids actors with long careers skewing measurements in more recent periods – e.g.,

the cumulative film counts of Eddie Murphy or Samuel L. Jackson would beat any newcomer to Hollywood in the 2000s.

Inequality is measured as the Gini coefficient of every window of data, where a measure of 0 represents perfect equality and 1 perfect inequality. As has been shown, the Gini coefficient is indifferent to where the inequality lies in the distribution (Clementi, Gallegati, Gianmoena, Landini, & Stiglitz, 2019). A measure of skew will be used to help demonstrate how the shrinking of the Gini coefficient from the 1980 to 2020 window is actually misleading for part of our study of inequality.

3 Findings

As stated in the introduction, there are two key findings from our analysis of IMDb data. The first relates to a bigger span of time – 1930 to 2020 – while the second conclusion is focused on blockbuster cinema after 1980. It is easiest to begin with the long history of casting in Hollywood, as it gives us reasons to incorporate additional variables into our focused analysis of blockbusters from the last 40 years.

3.1 Trends in casting from 1930 to 2020

Table 2 measures the inequality of casting in 10-year windows. For each window, the roles of every actor are tallied and grouped as one distribution. A Gini coefficient measures the inequality of each distribution, which contains a spread of 10-year "careers" – from actors with only a few roles to others with many.

Table 2 shows a historical trend of decreasing inequality. High inequality during the Hollywood studio system ($\sim$ 1920-1948) is consistent with the system's use of holding desired actors to multi-picture contracts (Schatz, 2010). Inequality in the studio system was produced with lucrative contracts that gave some actors dozens, even *hundreds*, of roles in short spans of years. Casting through agents became the new practice after the studio system was dissolved by the United States Supreme Court, in the 1948 decision of *United States v. Paramount* (Langford, 2010). Casting through agents, and on a film-by-film basis, is a sector-wide change that appears to coincide with an increase in casting equality.

Measuring inequality across decades shows how the modern blockbuster era from 1980 to the present is more equal than previous eras of Hollywood. The Gini coefficient, however, has a key flaw in its method of measurement: it is indifferent to skew, which changes depending on where the inequality occurs in a distribution. This indifference to skew biases our interpretation of Hollywood's transition to the contemporary era of theatrical cinema. In other words, there is more to this story than decreasing casting inequality across a large population of actors.

The skew in our measure of inequality is an effect of a large majority of actors becoming equal in their shared poverty. As shown in Table 3 the majority of

Table 2: Gini coefficient

10-year Window	Gini coefficient
1930-1939	0.69
1940-1949	0.66
1950-1959	0.61
1960-1969	0.44
1970-1979	0.35
1980-1989	0.33
1990-1999	0.36
2000-2009	0.32
2010-2019	0.25

Table 3: Number of roles, by percentile

	Percentile										
Years	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.99	Skew
1930-1939	1	1	1	1	2	3	5	11	24	70	3.85
1940-1949	1	1	1	1	2	3	6	10	20	64	4.19
1950-1959	1	1	1	1	1	2	3	5	11	35	4.30
1960-1969	1	1	1	1	1	1	2	3	5	13	4.20
1970-1979	1	1	1	1	1	1	1	2	3	10	3.87
1980-1989	1	1	1	1	1	1	1	2	3	9	3.74
1990-1999	1	1	1	1	1	1	1	2	3	10	4.01
2000-2009	1	1	1	1	1	1	1	2	3	9	4.24
2010-2019	1	1	1	1	1	1	1	1	2	7	4.89

working, twenty-first century actors will only secure one role in ten years. And if a twenty-first century actor successfully builds a career in theatrical film, say, for example, by appearing in ten films in ten years, they are among Hollywood's elite few. Therefore, from 1930 to 2019, ten-year windows increasingly skewed more to the left, and the general *increase* in equality was in fact a *general equality of under-employment*. Elite actors of the last thirty years might not be as busy as actors in classical Hollywood, but they still maintain their privileged status in relative terms, relative to the growing group of actors with infrequent acting jobs.

Historical changes in the skew of the actor distribution effects the ability for a random actor to build a career in theatrical films, which is a necessary step to becoming a star. Conversely, an elite subset of actors has not disappeared with historical change – instead, it is the average length of a 10-year career that changed. Elite actors continue to successfully build their careers, and potentially their stardom, just in a different context. This context will be analyzed with opening theatre data in subsection 3.2. The inclusion of opening theatre data

enables us to see rising inequality in the top levels of theatrical film. For now, let us understand what is missing from the observation of falling inequality within a general, undifferentiated population of actors. While there has been greater opportunity to be cast in *any* film after 1980, film projects are not created equal and some film distributors are on the periphery of Hollywood, rather than being members of the dominant centre.

3.1.1 An explosion of film distributors

Technological developments in video and digital exhibition have created new opportunities for film distribution. These opportunities, such as post-theatrical release and digital streaming, are exploited by everyone: "established" studios and their new competitors. When studying Hollywood cinema, even with a widened definition of what counts as a Hollywood studio (e.g., Amazon), the rapid influx of film distributors after 1980 can cause problems in our analysis. As shown in Figure 2, the growth of film distributors (Panel A) causes the average film distributor, in both our dataset and in the entire IMDb database, to rapidly shrink in terms of how many films it distributes per year. The average film distributor in the Motion Picture Association (MPA) has decreased its annual film output in the same span of time, but the gap between its average trend and the two other series in Figure 2B has widened in the eras of video and digital distribution.

The inequality of casting has two relationships with the historical change in average distributor size. First, there has been considerable growth in the number of small film distributors. A small distributor can distribute a film theatrically but it likely lacks the capital to give a film blockbuster-levels of theatres on opening weekend and to promote their projects with lots of advertising.[1] This growing population of small film distributors affects the inequality *between* film distributors, measured by the Gini index of films released. The major distributor of the 2000s, for example, is releasing fewer films than the major distributor of the 1950s, but rising inequality comes from a widening difference between a major distributor and an average distributor. Figure 3 demonstrates how the increase in film distributor inequality is strongly related to the decline of general casting inequality. From 1930 to 2020, casting inequality decreased as film distributor inequality increased.

The second relationship between casting inequality and average distributor size involves inequality *within* firms. Figure 4 demonstrates that larger distributors tend to produce higher inequality in casting than smaller distributors. The figure has split Hollywood's history into two broad eras. The relationship between casting inequality and distributor size weakened slightly after 1970, but the positive relationship between film distributor size and casting inequality remained strong.

If we connect the two effects of change in average distributor size, we can hypothesize that the biggest film distributors in the contemporary era are grow-

[1] For data on rising print and advertising costs in mainstream filmmaking, see Vogel (2020)

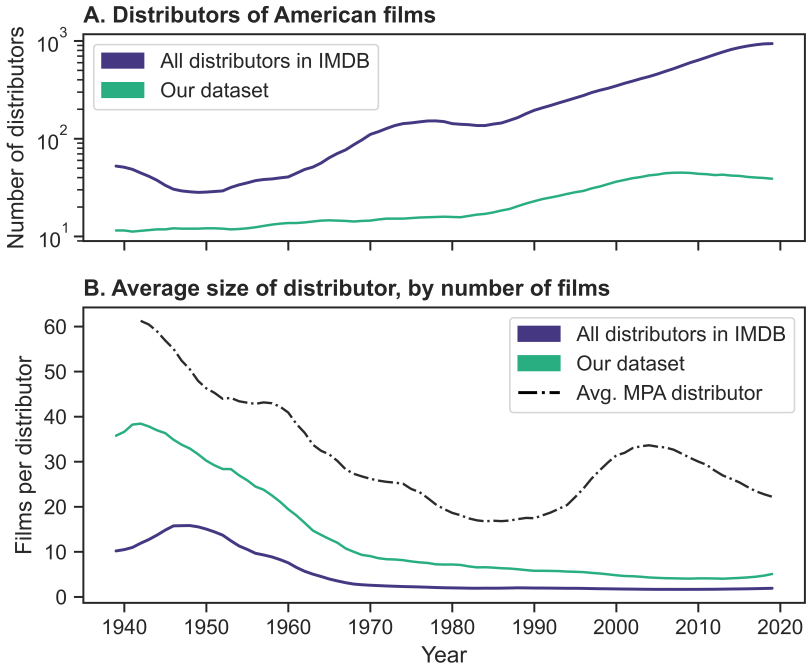

Figure 2: *Number of films, absolute and per distributor*

Note: MPA is the most recent name of the trade association that includes Hollywood's biggest film distributors. Previous names include: Motion Picture Association of America, Motion Picture Producers and Distributors of America (Lewis, 2002).
Sources: IMDb, MPA and Finler (2003) for number of films released per year.

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ing in size *and* increasing casting inequality *within their sphere of control*. The historical decline of *general* casting inequality (shown in Table 2) is partially explained by film distributors, on average, shrinking in terms of how many films they distributed. Conversely, a large firm will still tend to produce greater casting inequality in its film projects. This tendency for a large firm to produce greater casting inequality is historically relevant because film distributors at the very top of the film-distribution pyramid have actually been *growing* in size since the early 1980s. As shown in Figure 5, the biggest film distributors and the average film distributor collectively trended downward up until the early 1980s. After 1980, the film distributors above the 90th percentile, and especially those above the 95th percentile, began to grow the number of films they distribute per year.

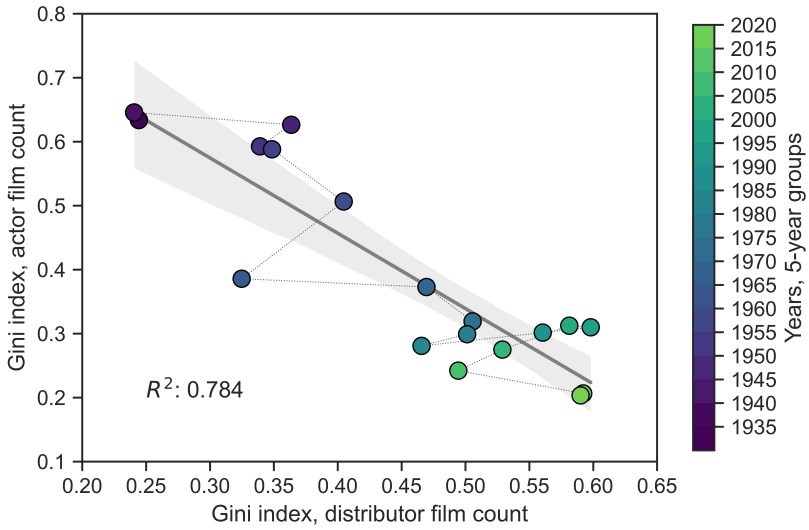

Figure 3: *Inequalities within casting and film distribution*

Source: IMDb.

3.1.2 The consumer experience of casting inequality

So far the paper has produced tables and figures about the inequality that exists independently of consumer attention. Regardless of whether someone watches the films or not, the roles have been cast, the films have been produced and distributed, and other working actors have been excluded from these opportunities.

What about consumer perceptions of this inequality? *Perceived inequality*, as I define it, is the casting inequality that is experienced by an individual watching only a sample of films from a larger population. For example, a consumer that watches five films with entirely different casts of actors will implicitly perceive a Gini index of zero.

Perceived inequality in casting is often a product of Hollywood's power to influence consumer behaviour. While our habit is to imagine that a consumer is neoclassical in temperament, and that barriers to free consumerism are low, a consumer's access to a wide variety of films is strongly affected by unequal access to films, especially in theatrical distribution. In the case of Hollywood's major distributors, a key strategy is to put each film on one of two tracks: wide release distribution (i.e., saturation booking), or platform distribution. A wide-release film starts its lifecycle with a big theatrical release. A platform release often begins in theatres but, regardless of whether it has a theatrical release or not, the growth in attendance for a platform release is beholden to word-of-mouth consumerism. Theatrically, this type of film has a small, selective opening in

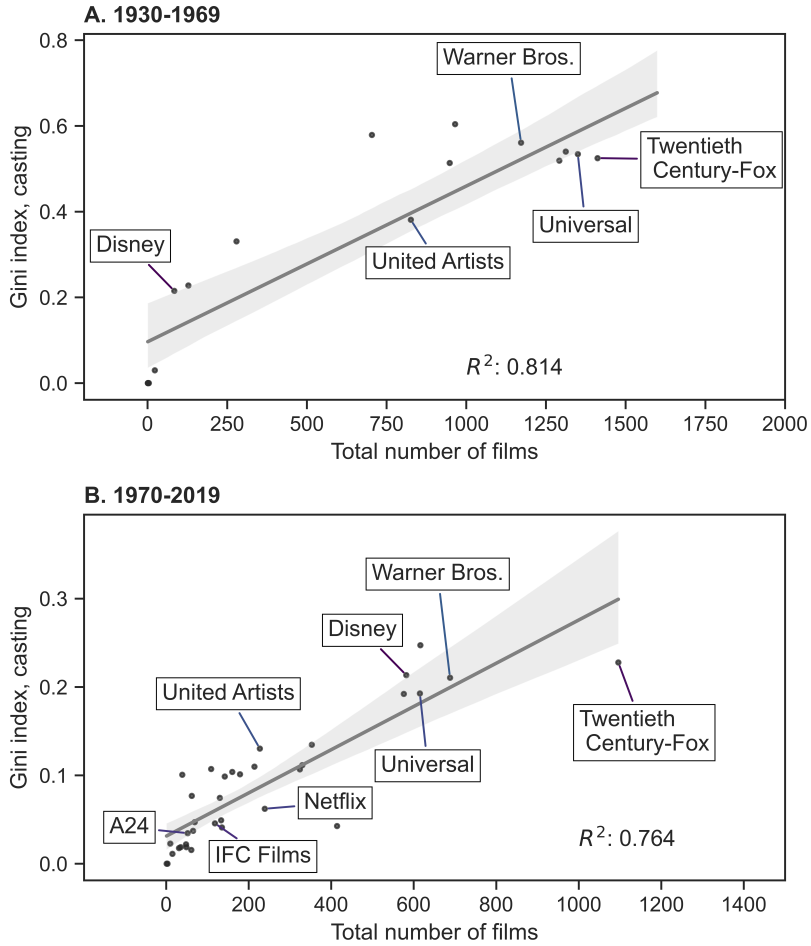

Figure 4: *Casting inequality per distributor*

Source: IMDb.

major cities (e.g., New York, Los Angeles), and the opportunity for nationwide popularity is heavily dependent on whether recommendations from critics and consumers can cause audience interest to explode.

The difference between wide and platform releases is a *structured* disadvantage. Evidence shows that Hollywood, in the language of Veblen (2004), strategically sabotages the ability for word-of-mouth opportunity to make a platform release outperform a wide release (McMahon, 2013b, 2015, 2019). To be sure, a film distributor will gladly take the revenues of a platform release that became a huge hit, but this type of success is double-edged and is unable to be loved

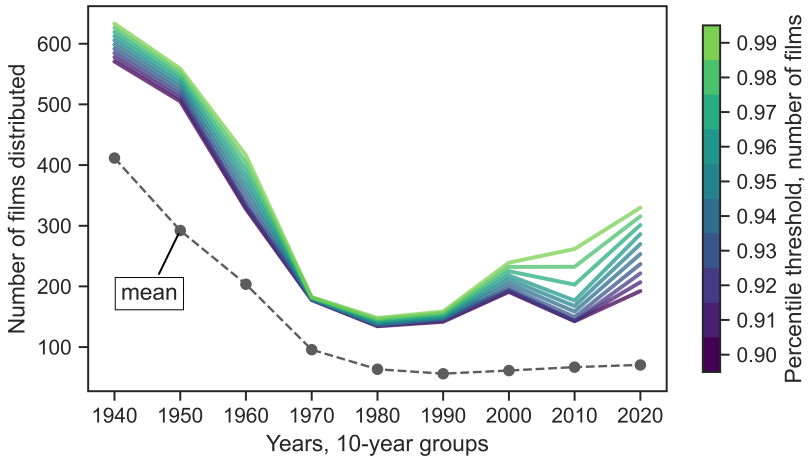

Figure 5: *Number of films distributed, above the 90th percentile and the average film distributor*

Source: IMDb.

long term. For every platform release that outperforms a wide release, there is a wide release film that is *underperforming* despite having many opening theatres at the start.

As I argue elsewhere (McMahon, 2019), franchise cinema, which is a popular version of high-concept cinema (Wyatt, 1994), has helped redistribute US theatrical attendance upward, to the widest releases of year. Thus, the perceived inequality of the franchise experience is growing to be the more representative experience of the average consumer. Figure 6 demonstrates that a rise of franchise film consumption is evident in the share of average moviegoing in the United States. In Panel A, the figure shows the US attendance per capita of all theatrical releases and the per-capita attendance of franchise films. Franchise films are tallied from the list of franchises compiled by boxofficemojo. Examples from the list include films from "Marvel Cinematic Universe", "Star Wars", "Disney Live Action Reimaginings" and "J.K. Rowling's Wizarding World". Some of the franchise sets overlap – e.g., films in the "Avengers" category are also in the "Marvel Cinematic Universe". To prevent double counting, a Python script is used to tally each theatrical release once, which means a film can only appear again if it is formally given a re-release. Panel B counts the annual number of films in the franchise set from 1970 to 2019.

As franchise films are a small sample of all theatrical releases, consumption of this sample is an implied experience of perceived inequality in casting. Figure 7 models the difference between the perceived inequalities of random consumers either consuming franchise films exclusively or not. The solid line assumes there

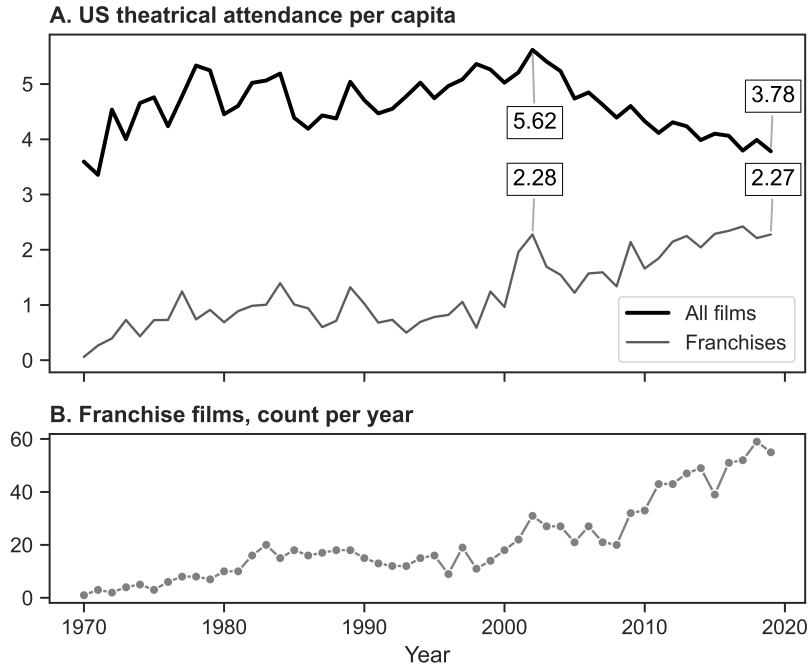

Figure 6: *Franchise attendance per capita, United States*

Sources: Franchise data (via Python) taken from https://www.boxofficemojo.com/franchise/. Bordwell (2006), "Appendix: A Hollywood Timeline, 1960–2004", for total attendance 1970–2004; www.natoonline.org/data/admissions/ for attendance 2005–2019. IHS Global Insight for total United States population.

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are few barriers to theatrical film consumption. In this scenario, each consumer randomly selects n films from each decade, where n is the US per-capita average of theatrical moviegoing. For example, the average US consumer saw roughly 47 films in theatres between 1980 and 1989; this means our model would, for each consumer, randomly draw 47 films from that period. The dotted line is a different scenario, and one that is a more representative of moviegoers being bombarded with franchise cinema. In this experience, the perceived inequality is measuring random draws exclusively from franchise films, which often begin their theatrical runs nationwide and in many theatres. Rather than experiencing the low perceived inequality of consumers in the first experience, consumers of franchise films experience higher perceived inequality, which also rose from 1980 to 2019.

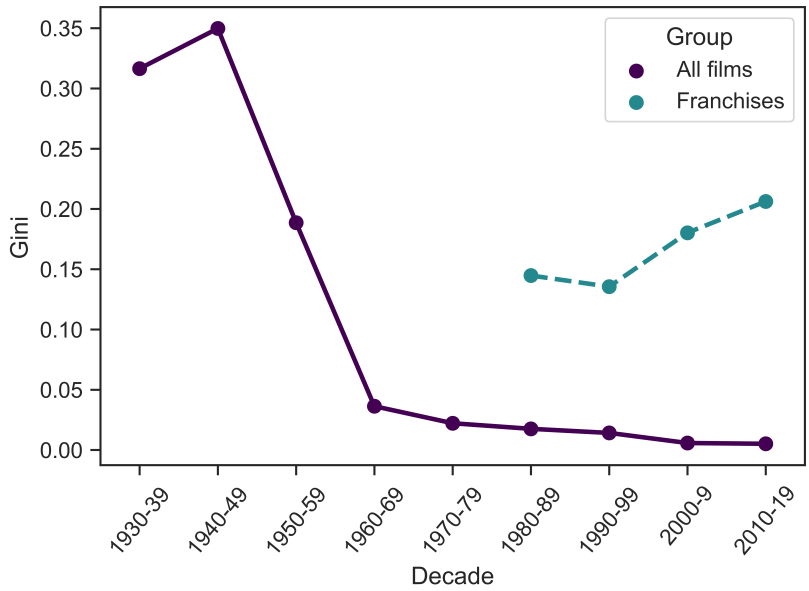

Figure 7: *Number of films distributed, above the 90th percentile of film distributors*

Source: IMDb.

3.2 Casting wide-releases after 1980

Data from boxofficemojo.com enable us to order films by opening theatre size. Opening theatres are useful indicators of future revenue expectations (McMahon, 2013b, 2019). If a film is released widely, in as many theatres as possible, the film is likely distributed by a major Hollywood distributor. The distributor's studio executives also believed the film project had the qualities to cover the costs of nation-wide promotion and advertising. Empirically, we want to look at the widest-released films as a subset of all released films. The general trend of declining casting inequality is actually obscuring the rising trend of casting inequality within this subset.

Figure 8 shows us how, since the early 1980s, casting repetition/inequality has been rising for the top tier of films, ranked by opening theatre size. The two panels also demonstrate that repetition of casting in the biggest films is virtually the same as casting inequality. For both panels, theatrical films are filtered at selected percentile ranges of opening theatre count. The 90th percentile, for instance, selects films that are above the 90th percentile of opening theatres in their respective years.

Repetition produced inequality because career building was an exclusive privilege for Hollywood's top actors. And if we recall the general trend of

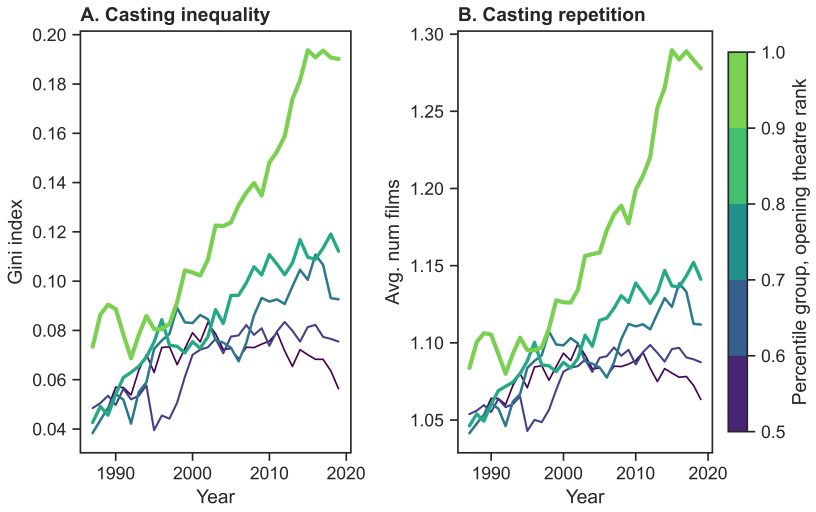

Figure 8: *Inequality/repetition of casting, across percentiles of opening theatres, 1980–2019*

Sources: www.boxofficemojo.com for opening theatre sizes of individual films, 1980–2019. IMDb for casting data.

casting, the majority of actors lack this privilege and can only secure one or two roles per decade. The location of this rising inequality in the world of theatrical cinema is significant. Wide-release theatrical cinema is not just *any* subset of film distribution. It is difficult to overstate the importance that a film have lots of opening theatres to generate big revenues theatrically and to be a "tent-pole" that can lift post-theatrical sales (Christopherson, 2013). In the United States, for example, the rising inequality of theatrical revenues is positively correlated with the rising inequality in the distribution of opening theatres between films (McMahon, 2019). Consequently, the films given more opening theatres than others are the ones that accumulate greater annual share of theatrical revenues.

4 Understanding rising casting inequality

Explaining casting inequality in Hollywood depends on a larger theory about the source of star power. The belief, for example, that star power is produced by consumer demand will affect how one sees rising casting inequality. Alternative assumptions about the economics of culture will change the perspective. An approach that is critical of mainstream assumptions might replace the autonomy of individual consumers with the power of dominant firms to *create* demand from above. In this case, Hollywood firms are conceptualized as being the primary drivers of rising casting inequality.

This section argues that the capital-as-power approach, first developed by Shimshon Bichler and Jonathan Nitzan, provides a strong explanation for the evidence of casting repetition/inequality. The capital-as-power approach argues that a capitalist can accumulate faster than others through increases or decreases in the elements of capitalization, such as risk (Nitzan & Bichler, 2009). The benefit of an increase or decrease depends on where a variable of the capitalization ritual is located in the calculation of discounting expected earnings to present prices. Risk is in the denominator and a factor of the discount rate. The drive to accumulate by *decreasing* risk explains why, since the early 1980s, rising casting repetition/inequality is happening in a specific place, as the films that matter most to Hollywood are its wide-released blockbusters. Controlling the casting decisions of these projects is a component of a larger strategy of risk reduction. Consequently, we can observe how a subset of top-tier films is deviating from the general trend of falling repetition/inequality in casting across all films. The increasing repetition/inequality of this subset is part of a push to decrease Hollywood's risk perceptions in the last forty years, especially in relation to the risk perceptions of large firms in other sectors.

A brief survey of neoclassical theories of film casting will demonstrate why the capital-as-power approach is the preferred theory to understanding star power. Neoclassical economics is undoubtedly the most popular approach for theorizing the economic value of casting decisions. Unfortunately, neoclassical analyses of casting will produce circular arguments about the revealed preferences of a decision, whether on the demand side of the consumer or the supply side of film studio.

4.1 The neoclassical myth of revealed star power

Analyses of casting decisions in Hollywood are often influenced by neoclassical assumptions. Typically, these economic assumptions transform measurable characteristics of casting – e.g., filmography, social media followers, awards – into theoretical indicators of utility, for both the studio that hires an actor and the moviegoer that selects a film to watch. Once transformed this way, measurable characteristics typically become statistical variables that model the production function of economic value. Modelling star power with statistical analysis, like a linear regression model, is not problematic *per se*. It is a problem when neoclassical economics needs observable variables of cinema, whether measured in prices or productive output, to be reflections of utility, which is what is said to drive economic behaviour. For the variables of a linear regression to be clear reflections of utility, certain market conditions must be real. Otherwise, the model of the supply and demand of star power – or its deviation from equilibrium – falls apart from counter-factual evidence or the weight of accumulated unknowns.

In economic analyses of casting and star power, this existence of necessary market conditions is assumed more than it is empirically investigated. We know this because most articles and studies fast-forward straight to the empirical step: gathering independent variables for the statistical modelling of star power's util-

ity (Cattani, Ferriani, & Allison, 2014; Elberse, 2007; Fleck & Hanssen, 2016). When assumptions about market conditions need to be stated, the connection between theory and evidence is made, implicitly or explicitly, with the concept of *revealed preferences*. Coined by Paul Samuelson, revealed preferences is a neoclassical term that uses the empirical act of choosing one good from alternatives to define the utility of one's preferences. A person's preferences for buying and selling – i.e., how they subjectively define the utility of goods – cannot be measured directly; but, by assuming that utility drives behaviour, an individual's choice to purchase a good will "reveal" the utility of this behaviour, relative to available alternatives.

Problems with the revealed-preferences argument arise on the demand and supply sides of star power. By looking at each side in stages, we see how issues on one side will often be connected to assumptions on the other side.

4.1.1 Demand-side issues

On the demand side of consuming star power, it is difficult to determine that one is actually choosing a film because of its cast's star power. Take, as a hypothetical, a film that stars Jennifer Lawrence. If a moviegoer has personal preferences for "Jennifer Lawrence movies", then the purchase of a ticket for our hypothetical film signals that, among alternatives in the market, this is the preferred choice. But if it is also possible that moviegoers will watch the movie for entirely different reasons – e.g., "I just wanted to watch a good popcorn movie and I don't care who the lead actor is". In this case, the moviegoer is still choosing the film from available alternatives, but it is unclear what Jennifer Lawrence's star power has to do with the choice.[2]

The concept of revealed preferences will come to be haunted by the mysteries of what are inside the heads and hearts of consumers. Following the logic of this economic method, we need to know the indifference curve for the demand of star power. If Jennifer Lawrence was replaced with Kristen Bell, for example, what would happen to the demand for this hypothetical film? Would demand go up or down? Or would it remain the same? Empirical data on the careers of Jennifer Lawrence and Kristen Bell could help explain the cost of substitution, *but only if it is first assumed that consumption is revealing their respective utility*. In other words, the clarity of revealed preferences depends on it being empirically true in market behavior; otherwise there is no guarantee that actual prices reflect utility.

Unfortunately for the theory of revealed preferences, its necessary conditions are absent in Hollywood cinema and in capitalism in general. Real market behavior of producing, distributing and exhibiting cinema is not, *on all sides of the equation*, comprised of small, individual actors. Giant firms, aggressive advertising and political ideologies are just some of the factors that make it difficult to use empirical prices on the assumption that they reveal the utility

[2] Although I am using my own hypothetical example, this point is inspired by Bichler and Nitzan's example of "Mexican flowers" as their example (Nitzan & Bichler, 2009, p. 116).

maximization of consumers in a demand-supply equilibrium.[3] The blind spots about the drive of consumer behavior grow because it is also possible that the length of the working day, stagnant wages, the social division of labour, and the political and environmental conditions of society cause consumers to go to the movies. For instance, the largest media firms benefit from what Marx discovered in 1844, namely, that the persistence of alienated labour causes us to dislike labour and treat time away from work as a sanctuary from both physical and mental effort (Marx, 1988, p. 76). Additionally, the sales of mass culture rely on the institutions and social relations that can act as indirect conduits for business interests. Through the family unit, social taboos, a hierarchical distribution of scarcity and the control of technological innovation by vested interests, the instinctual energies of a population are, to varying degrees, already deflected into "socially acceptable" forms of sexuality and pleasure (Horowitz, 1977, 1987; Marcuse, 1966).[4]

Monopolies, aggressive advertising and repression – labelling these as so-called distortions of a demand-supply equilibrium will not eliminate the issue with a theory of revealed preferences. Take, for example, Barry Litman's attempt to square the circle in *The Motion Picture Mega-Industry*. Trying hard to balance theory and historical fact, Litman seeks to recognize the existence of both consumer sovereignty and monopoly power in the history of Hollywood.

[3] The issue with revealed preferences in casting has strong similarities to arguments about "cultural discounting" (Hoskins & Mirus, 1988). Cultural discounting refers to the amount of "discounting" a consumer makes when they are presented with media from a foreign culture– e.g., you would be willing to pay \$10 for a domestic film and \$10 $\times$ 0.6 for a foreign film. The concept was designed to explain the clear asymmetry in media trade: American film and television are popular abroad, but the film and television of other countries are not popular in the United States. Hoskins and Mirus (1988) find key reasons for American cultural dominance. First, when the cultural discount is equal for all countries, the country with the largest domestic market wins: "If the costs of production are the same for all programme producers and the size of cultural discount is equal for all countries, then the cultural discount alone is sufficient to explain why the country with the largest domestic market, the US, dominates international trade". Second, cultural discounts are not equal across countries and the United States, argue Hoskins and Mirus, is discounted *less* than other cultures around the world. "The extremely competitive US broadcasting system", say Hoskins and Mirus, "together with the Hollywood tradition has resulted in entertaining, common-denominator, tried-and-tested drama programming that is well received by viewers in most foreign markets, markets long acclimatized to Hollywood products through cinema exposure. US viewers, on the other hand, appear unusually intolerant of foreign programming" (Hoskins & Mirus, 1988, pp. 511-512).

Others have tested the effects of cultural discounting empirically (Shin & McKenzie, 2019). However, there is a critical problem that spans the theory and application of the concept. Under its current neoclassical economic form, the measure of cultural discounting is reliant on the assumption of revealed preferences, whereby sales data reveals the so-called effects of cultural discounting. Working backwards in this case, from prices to utility, is especially problematic because "discounting" the values of other cultures is hardly a "rational" comparison of alternatives. Instead, each cultural discount can contain any mixture of geopolitical power and region-centric ignorance, as it is entirely possible that a consumer could be heavily "discounting" foreign films and television programs with racism and xenophobia.

[4] It is noteworthy that Theodor Adorno of the Frankfurt School, one of the fiercest critics of mass culture, came to a similar conclusion about the ideological strength of consumerism: "the culture industry has ... become total", but it is "doubtful whether the culture industry and consumer-consciousness can be simply equated with each other" (Adorno, 2004, p. 195).

On the one hand, he states:

> ... effective consumer demand directs supply and strong "consumer sovereignty" prevails. This is clearly the case in the motion picture marketplace where movie patrons register their dollar votes directly for the kinds of movies they prefer, and the differential box office rewards create the financial incentive for the next round of motion picture investment. (Litman, 1998, p. 4)

This theoretical position on the sovereignty of consumers is maintained, on the other hand, in a study that analyses the organizational power of Hollywood's major film distributors (Litman, 1998, p. 5). To balance these two conflicting perspectives about the character of capital accumulation, Litman argues that the history of the business of Hollywood can be split into two periods: the period of organizational power and the subsequent period of the sovereign cultural consumer. For Litman, the twilight of Hollywood's monopoly power was the late 1940s. Price fixing and "excess" profits were enjoyed up until 1948, when the United States Supreme Court decided on Hollywood's vertical integration of film production, distribution and exhibition in *United States v. Paramount Pictures*. After the Supreme Court's ruling, a new day dawned:

> With vertical disintegration and the end of block booking and franchising, assured access to theatres was no longer guaranteed: films would have to compete according to their intrinsic quality. This naturally opened up the market for independent producers and distributors whose products would now be judged according to merit rather than percentage. (Litman, 1998, p. 15)

Litman's characterization of the end the classical studio system assumes that legal regulation rinsed off anti-competitive contaminants from an economic system that is, at its core, atomistic and competitive. Similar to Olson (1982), Litman assumes that there is nothing about politics and institutional power that can change the meaning of capital; the economy, even when contaminated by external non-economic factors, is strictly defined as a rational determination of nominal prices that behave according to "real" utility. Monopolies can affect consumer demand, or they can erect arbitrarily high barriers to entry on the supply side, but their effect on the revealed preferences of consumer sovereignty does not, in this picture, change the definition of what the capitalist economy "truly" is.

In the tangled web of Hollywood's history and economic theory, Litman appears committed to the save the assumption that "consumer's choice is the decisive social phenomenon from which we should begin further analysis" (Lowenthal, 1961, p. 12). But is Hollywood actually power-free in the contemporary age? To Litman's so-called advantage, we can claim that *any* consumed good has revealed its utility to the buyer. As Joan Robinson pointed out in her critique of neoclassical economics, the metaphysical nature of utility creates an "impregnable" circularity, irrespective of historical condition: the utility of a

good is the quality that makes individuals want to buy it, and the fact that people buy the good shows that it has utility (Robinson, 1964, p. 47). For a measure of star power's utility, this impregnable circularity is actually two levels deep. Consumers are not directly buying star power when they purchase a movie ticket or stream a film online. Thus, even if the revealed utility of the film is verified through purchase, there is an added circularity: film stars give films utility, which is what individuals want to consume; and the fact that people watch films shows that film stars add utility to the films.

4.1.2 Supply-side issues

It is difficult to see how the cost of casting a celebrity is proportional to value added on the supply side of production. First there is the problem of creating magnitudes of productivity, which is necessary for the inputs of acting to be comparable. The common approach is to quantify the supply side of celebrity casting with past measures of theatrical revenues or categorical variables, such as award nominations and wins. Unfortunately, this type of estimation of star-power productivity is quickly beset with problems of indirect measurement. For instance, there is the issue of assuming that past theatrical revenues are proportional to star power value – this is what needs to be explained, so it is tautological to claim that a star is anyone who has had past success. Moreover, the inequality of theatrical distribution creates revenue differentials that, if assumed to reflect star power value, are extreme. A celebrity like Tom Cruise "generating" $200 million of theatrical revenues is producing 250 times the value of someone generating $800,000 in independent cinema, who herself is producing four times the value of someone producing $20,000 per year. The theoretical implication that A-list celebrities create 1,000 times more value than an actor in a film that generated $20,000 is not problematic simply because the multiple is large. Without a means to measure a unit of acting productivity independently of prices, we actually cannot determine whether this multiple is too big or too small. We are simply stuck assuming that the prices reflect the productivity of the inputs. Using categorical variables such as awards produces the same assumption, just in a different form.

Analysis of Hollywood's supply-side can involve the construction of an economic model, which appears suitable to identify and measure the key independent factors in film production. On their own, the results of an economic model can look impressive, as the results estimate the relative impact of variables on desirable outcomes like box-office revenues or artistic merit. For instance, Ferriani, Cattani, and Charles (2007) deconstruct film production and find that the human capital of movie stars are key determinants in the production of box-office revenues. The authors also claim that industry networks of actors and creative people also generate revenues, but this variable of Hollywood production does not have the same positive effect as movie stars on the production of artistic recognition. Elberse (2007) looks at casting a blockbuster-level star as an event that can be priced. Using data from the Star Bond Index on the Hollywood Stock Exchange – a stock market simulation that treats movie stars

as capital goods – Elberse looks at what happens to a star's price when news breaks of casting decisions. For example, if Disney announces that Chris Evans will reprise his role as Captain America *in reality*, and the simulated price of Chris Evans increases 5 percent on the HSX, we have a hypothetical model of how Evans-as-Captain-America is capitalized by Disney.

The supply-side analysis of Hollywood film production can look robust, but it too, like the demand side of the equation, is undermined by the inability to measure productivity independently of prices or other categorical representations, like Academy Award wins. Let us look at three dimensions of the issue. Each dimension orbits around the need for star power to be a "measurable unit" of human capital; otherwise, it cannot function as an input in a neoclassical production function.

First, a neoclassical model of Hollywood star power will often contain an implied state of equilibrium between supply and demand. For instance, Fleck and Hanssen (2016) produce a sweeping dataset of gender-based casting in the history of Hollywood, but define gender discrimination according to market outcomes. Thus, if Hollywood is supplying star power on the free market, gender discrimination in casting is defined by whether there is an "over-supply" of male actors – i.e., if one hires a male actor instead of an female actor for an "unproductive" reason, that is discrimination.[5] "Over-supply" is relative to an equilibrium point, but how do we know the market is in equilibrium? Neoclassical economics has theories of how prices move in and out of equilibrium in its theoretical space of demand and supply curves, but any empirical measure of has nothing but an assumption of where empirical data is positioned relative to an imagined equilibrium state. Consequently, a change in assumption about equilibrium state changes the utility of the same actor or film – and how can we be certain we have applied the correct understanding of equilibrium?

Second, Hollywood is assumed to be a passive economic actor that, with no power at its disposal, changes its supply-side behaviour in *reaction* to changes in demand – just as the individual rational consumer changes behavior in reaction to changes in supply. But if demand and supply do not maintain independence from each other, even this hypothetical dance of utility maximization stops. According to Sweezy (1939), a large firm under conditions of oligopoly is able to have a direct impact on the demand side of the equation. This impact is observable in how large firms "react" to decreases in demand much differently to the ways will react to increases in demand. An oligopoly creates disincentives for any large firm in the group to lower prices in periods of declining demand, as a decrease in price will not yield the expected increase in consumer demand and

[5] This argument is coupled with the idea that systemic discrimination in Hollywood casting is impossible because consumers, individually free and rationally maximizing, are deciding to pay for Hollywood films on the market. In other words, market exchange is the ultimate judge of discrimination; anything more pro-active, like political regulation, disturbs the utility of consumer preferences: "From a policy perspective, if the gender and age mix of actors is driven by consumer demand, the nature of the industry (i.e.,unrestricted entry and exit) would make it difficult (or very costly) to effect a substantial change through regulation or institutional redesign – because the opportunity to capture rents by producing films the public wants to see are unlikely to go unexploited ...." (Fleck & Hanssen, 2016, p. 47)

it will not pressure other firms to rush into downward competition. Sweezy's critique makes the untangling of the supply of star power from the power of Hollywood's oligopoly impossible. Past theatrical revenues are themselves products of firms setting prices under conditions of oligopoly. Thus, consumers could actually be becoming tired of seeing the same actors again and again, but the relationship between negative changes in consumer behavior and revenue data is complicated by the ability of firms to hold to "inflated-above-utility" prices, which help produce the revenue data that is being used to estimate consumer demand. Moreover, efforts to increase marginal productivity are not obvious when the costs of an oligopoly can be spent on unproductive exercises of power over smaller firms. For example, Horkheimer and Adorno (2002) argued that corporate advertising in the age of mass culture is a process of negation. What was once about "orienting the buyer" in a competitive market is now a "blocking device" for firms that can out-spend much smaller firms. In an environment in which a lot of money is used to advertise and promote the most dominant firms, "anything which does not bear its [money's] seal of approval is economically suspect" (Horkheimer & Adorno, 2002, p. 131). The so-called economics of advertising changes qualitatively when consumers are already informed about the most popular commodities on the market: "Advertising becomes simply the art with which Goebbels presciently equated it, *l'art pour l'art*, advertising for advertising's sake, the pure representation of social power"(Horkheimer & Adorno, 2002, p. 132).

Third, the results of a regression model, as even some the authors acknowledge (Ferriani et al., 2007), risks misrepresenting Hollywood filmmaking as a mechanical production function of inputs and outputs, whereby any one independent variable can increase or decrease as everything else stays the same. This risk is inherent to a neoclassical production function, as it requires that the marginal product of an input like star power is defined by its own effect on the total output. Unfortunately, the method has to assume that the capitalized value of star power is somehow free from the theoretical issue of *reswitching*, which was Piero Sraffa's knockout-punch to neoclassical economics in the Cambridge controversy.[6] Sraffa demonstrated that the simple logic of switching production process at a clear point when labour-intensive production was more profitable than capital-intensive production, or vice versa, is undermined by the possibility of re-switching – e.g., choosing the production process A instead of B, and then re-switching back to B from A. This possibility is there because, problematically, the same production process can be either more capital-intensive or labour-intensive than another process. Reswitching does not bother the capitalist who thinks only in prices and ownership (Veblen, 2006a), but it does bother any claim that wants to say, explicitly or implicitly, that prices of production are proportional to the productivities of its definable inputs. The productivity of captial goods, whether they be lights, cameras or human capital – which is a common method to label creativity, ingenuity and celebrity as capital –

[6]This summary of the reswitching problem draws from Hunt (2002); Nitzan and Bichler (2009).

cannot fluctuate such that the capital intensity of a physical process is ambiguous. Without a fixed index of capital intensity, it is impossible to build a supply curve with a production function (Nitzan & Bichler, 2009, p. 80). In our case, the measure of star power's productivity is impossible because of Sraffa's demonstration. Star power must have a fixed intensity in a neoclassical model, as the productivity of star power needs to be the *cause* of the distribution of income in Hollywood acting.

4.2 Star power as controlled risk reduction

Other writers have considered how famous movie stars, with their perceived ability to draw consumers to some movies rather than others, are employed to reduce financial risk (Elberse, 2007; Hadida, 2010; Ravid, 1999). However, the underlying assumptions of these analyses will present risk mitigation as being a passive action of individual firms. In such a presentation, the star system and blockbuster cinema can only mitigate or hedge the risk that is inherent to the greater business environment. In other words, firms in Hollywood film business are thought to be ineffective in reducing the *overall level of systemic risk*.

Skepticism about the ability of Hollywood to reduce systemic risk often stems from an author's use of neoclassical economics. Neoclassical theories of risk in the Hollywood film business tend to put individual, autonomous consumer sovereignty at the centre of their analysis. When placed at the centre, consumer sovereignty is the ultimate *extraneous* risk to business strategies; a consumer might "form attachments to specific film 'markers' such as stars and genre" and might even "seek a degree of familiarity in their film consumption experience" – but, nevertheless, "consumer tastes in film are ultimately unpredictable" (Pokorny & Sedgwick, 2012, pp. 188-190). Consumer unpredictability, on its own, is certainly a relevant factor to a film business. However, confusions about risk grow because neoclassical approaches, particularly the competitive branch of neoclassical economics, elevate consumer sovereignty and ignore the role of power in Hollywood's business strategies. For instance, to suggest that, in the film business, economic actors are in a state of perfect competition and too small to change the historical circumstances of risk (De Vany, 2004, p. 270), the sizes of the dominant firms in Hollywood have to be ignored. One also has to ignore questions about the abilities of dominant firms to affect the ideologies of its consumers. If Hollywood has ways to manipulate consumer attention, it is hardly straightforward to argue that the sovereign consumer is an unalterable arbiter, possessing the "economic" freedom to always be fickle when the next film is released (Garvin, 1981, p. 4).

The capital-as-power approach helps us rethink star power as risk reduction. The approach follows conventional finance and understands that risk is an important variable to discounting expected earnings, but it is also critical of our deepest assumptions of what capitalization and economic value represent in an empirical world populated, from around 1900 onwards, by trusts, trade associations, giant corporations, conglomerates, active governments and other social institutions. On the timeline of intellectual history, the capital-as-power

approach is an attempt to be a breaking point. Neoclassical economics and Marxism have, respectively, constructed large theoretical edifices to keep "real" magnitudes of productivity at core of capital accumulation. This committent to magnitudes of productivity, measured either as utility or socially necessary abstract labour time, must explain how prices in the historical development of capitalism are in fact reflections of productive values. Unfortunately, this history is infused with power processes, and the commitment to "real" value requires that economic production is analytically distinguishable from non-productive social processes (such as distortions from politics) or fictitious capital (prices with no "real" values underneath).

Bichler and Nitzan argue that there is a fundamental reason why mainstream economics keeps stumbling to explain capital accumulation: instead of being an index of productivity, capital is an index of power. The quantities of capital are a symbolic representation of a power struggle: "a conflict between dominant capital groups, acting against opposition, to shape and restructure the course of social reproduction at large. In this struggle, what gets accumulated is not productivity as such, but the ability to subjugate creativity to power" (Nitzan & Bichler, 2009, p. 218). Bichler and Nitzan readily acknowledge that such claims about capital cannot be made trivially. So much of our common language about capital accumulation implies that the true foundation of magnitudes of capital lies in the realm of productivity. However, Bichler and Nitzan conceptualize captial *as* power with the help of Veblen (2004, 2006b), who was deeply sceptical that the quantities of capital could ever be measures of industrial production:

> If capital and capital goods were indeed the same "thing," [Veblen] asked, how could capital move from one industry to another, while capital goods, the "abiding entity" of capital, remained locked in their original position? Similarly, how could a business crisis diminish the value of capital when, as a material productive substance, the underlying capital goods remained unaltered? Or how could existing capital be denominated in terms of its productivity, when technological progress seemed to destroy its pecuniary value? (Nitzan & Bichler, 2009, p. 231)

According to Bichler and Nitzan, Veblen's distinction between business and industry carries over into the quantitative dimension of capital. In other words, the strategic sabotage of industry by business, according to Bichler and Nitzan, is the institutional backbone of capitalization. In this sense, capitalists are looking to the overall state of society in order to judge how expected earnings from strategic sabotage will eventually translate into actual earnings, what risk premium they should factor in and what should be considered the normal rate of return.

The capital-as-power approach is, therefore, open to the investigation of how Hollywood is seeking to reduce the risk of the film business with the power derived from owning key pieces of cinema. Capitalist power may never be able to make the business of culture risk-free, but we put up barriers to our own analysis if we assume that risk in Hollywood is inherent to its economics. Moreover, we

have reason to be skeptical that Hollywood's casting decisions are unprotected against the uncertain winds of future consumer demand. Some uncertainty will remain in the decision to cast someone again in a Hollywood blockbuster. However, with the power of Hollywood distribution behind it, the risk of star power can, in terminology of Frank Knight, be "easily converted into effective certainty; for in a considerable number of such cases the results become predictable in accordance with the laws of chance, and the error in such prediction approaches zero as the number of cases is increased" (Knight, 1921, p. 46).

In the case of star power, its risk involves the broader uncertainties that come from building pyramids of casting inequality/repetition. The evidence above has demonstrated that pyramids of casting inequality/repetition were built within wide-release film distribution, a key subset of contemporary cinema. But is this a component of a broader project of risk reduction? My recent writings have sought to demonstrate that Hollywood's dominant firms have embraced risk reduction as an effective alternative to rises in expected earnings, which have stagnated since the early 1990s (McMahon, 2015, 2019). Casting inequality/repetition is not the only effect of Hollywood's risk reduction; and star power is not simply a financial phenomenon of the last forty years. However, the historical pattern of rising star power through inequality/repetition correlates with considerable increases in the predictability of theatrical cinema.[7] For example, Figure 9 presents the relationship between theatrical predictability and casting inequality above the 90th percentile of opening theatres. To measure theatrical predicability I take the Spearman's correlation between opening theatre rank and theatrical gross rank. This correlation of ranks is a proxy of forward-looking risk, as firms must decide on the distribution of opening theatres with only *expectations* of how theatrical revenues will appear opening day and onward (McMahon, 2013b). Thus, the risk of a bad prediction – i.e., a low Spearman r – is that, in actuality, the largest theatrical releases will only generate low-ranking levels of revenues (McMahon, 2019).

Figure 9 helps tell the story of political economic change in Hollywood. The predictability of the very largest theatrical releases in Hollywood had ups and downs from the 1980s to the early-2000s. Casting inequality rose during this period, but periods of decline prevented the overall increase to be considerable. The relationship between predictability and casting inequality strengthened in the twenty-first century. The Spearman correlation between opening theatre rank and theatrical gross rank increased for films above the 90th percentile and casting inequality continued to rise after 2000.

For the capital-as-power approach, its central measure of capital accumulation is differential. Differential accumulation, as defined by Bichler and Nitzan, is rooted in capitalization. More specifically, it is rooted in the relative differences between capitalized properties. There is an implicit differential mea-

[7]This argument about considerable increases in the predictability of theatrical cinema stands in opposition to the more common argument that the future predictions of theatrical cinema are uncertain, sometimes to the point where "Nobody knows anything". For explanations of why I reject common arguments about the high risk of Hollywood cinema, see (McMahon, 2013b, 2019).

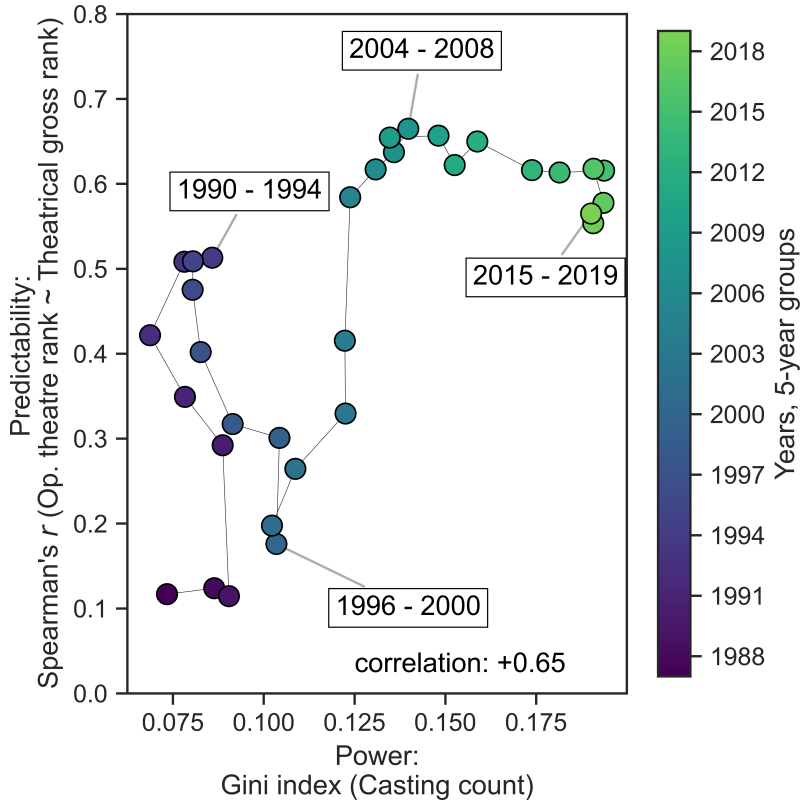

Figure 9: *Theatrical predictability versus casting inequality above the 90th percentile of opening theatres, 5-year groups*

Sources: boxofficemojo.com for US theatrical revenue data. IMDb for casting data.

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sure between any two magnitudes of capitalization. For example, on December 2, 2020, Apple's market capitalization ($2.093 trillion) was 1.7 times larger than Google's ($1.236 trillion), and Google's was 4.4 times larger than Disney's ($278.1 billion). Taken at a single point in time, these multiples are static measures of differential capitalization. Differential accumulation measures how differential capitalization changes over time. Treated as a dynamic process of redistribution, firms accumulate differentially when their capitalization rises faster than that of others and "their distributive share" becomes "bigger and bigger" (Nitzan, 2001, p. 230). Risk is an element of capitalization, so it does not tell the whole story of Hollywood's capitalist character. However, the reduction of risk, both absolutely and differentially, has been Hollywood's key strategy since the early 1980s. In the conglomerate, blockbuster era of Hollywood, its average differential earnings have stagnated, and are insufficient to explain Hol-

lywood's contemporaneous rise of differential capitalization.[8] A reduction of risk is Hollywood's primary strategy for differentially accumulating.

Figure 10 helps us understand that increasing casting inequality/repetition is contemporaneous with a larger project of reducing differential risk. The figure compares 5-year windows of casting inequality to rolling windows of differential risk. The y-axis measures risk with a series of steps. The measure first takes the percent change of a 5-year smoothed series of operating income per firm of Hollywood's largest film distributors (Columbia, Disney, Paramount, Twentieth Century-Fox, Universal and Warner Bros.). A rolling 15-year window then calculates the standard deviation of the percent change. The product is a series of points that, each year, represents the Hollywood's volatility of earnings per firm.[9] To calculate differential risk, the risk per firm of Hollywood is divided by the risk per firm (following the same methods) of "Dominant Capital". Dominant capital is a 500-firm proxy of the S&P 500 . For each year, Dominant Capital includes the top 500 firms on the Compustat database, sorted by the market capitalization of all firms that are listed, but not necessarily incorporated, in the United States.

[8]For a detailed breakdown of the data, methods and limits of comparing the differential capitalization of Hollywood to its differential earnings, see (McMahon, 2019).

[9]I call this group of firms "Major Filmed Entertainment" in other writings (McMahon, 2013a, 2015, 2019).

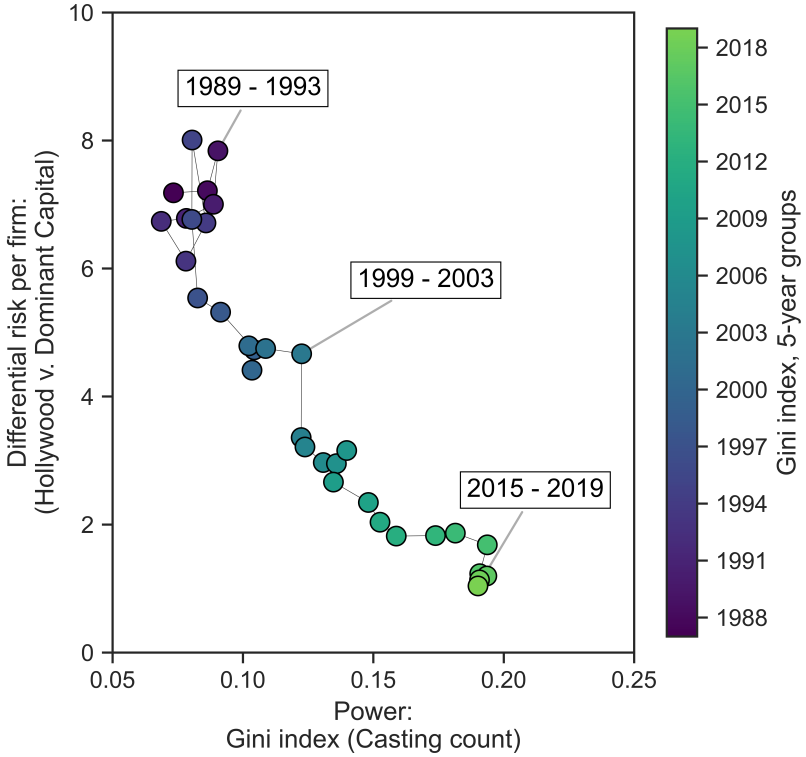

Figure 10: *Theatrical predictability versus casting inequality above the 90th percentile of opening theatres, 5-year groups*

Note: risk is calculated as a 15-year rolling standard deviation of the annual percent change of operating income per firm. In this figure, operating income per firm was first smoothed as a 5-year rolling average. Sources: IMDb for casting data. Compustat through WRDS for firm data of Dominant Capital and for operating income of Columbia, Disney, Paramount, Twentieth Century-Fox, Universal and Warner Bros., 1950-1992. Annual reports of Disney, News Corp, Viacom, Sony, Time Warner (Management's Discussion of Business Operations for information on their filmed entertainment interests) for operating income of Major Filmed Entertainment, 1993-2019.

5 Conclusion

A successful wide-release can be a payday for many people (Leaver, 2010), including the actors who, in addition to their salary, are sometimes promised a percentage of the gross revenues. Wide release cinema is also, in the present period of blockbuster cinema, one of the best places for an actor to build star power. This article gathered IMDb data to investigate how star power is rooted in capitalist power, whereby casting repetition equals the production of casting

inequality in Hollywood. This investigation is useful because of how easy it is to think that the casting of movie stars is a permanent characteristic of Hollywood cinema. At a fundamental level, Hollywood has never been without its movie stars. Historically, however, the data of this paper demonstrates that casting inequality/repetition can be viewed at two different zoom levels. When zoomed out, there has been a historical decline in casting inequality/repetition. Yet this decline of inequality is misleading, as the equality that was gained is undesirable: an equality of underemployment in theatrical cinema. When zoomed in, we look at the subset of wide-released films, those that are released theatrically and with thousands of opening theatres. Here, in this subset of films, we see a trend of rising inequality/repetition. Elite actors are being cast repeatedly for wide-release films and this repetition is exclusionary – few gain this privilege.

This paper also theorized rising casting inequality/repetition as a means for Hollywood to reduce risk. This reduction of risk was conceptualized with the capital-as-power approach. This approach offers a critical alternative to neoclassical models of casting and Hollywood economics, more generally.

Looking to future research opportunities, a key task will be to investigate the inner-workings of Hollywood casting. So far, we have evidence of the risk-reducing effects of inequality. This was a crucial step because, as Fix (2019, 2021) demonstrates in his research, the inequality of corporate hierarchies is a much better explanation of income distribution than productivity, assuming that the latter can be measured in the first place. Yet the hierarchy of casting inequality also has many details within, as it comes together through the day-to-day behaviors of executives, agents, actors and fans.

Researching these day-to-day behaviors through a lens of power will stand in opposition to the way Hollywood can use its "economics" to rationalize its so-called inability to widen the boundaries of its creativity. For example, Ridley Scott's *Exodus: Gods and Kings* is a telling example of a story of power being transformed into a story of efficiency and consumer demand. In this case, the creative boundaries concern Hollywood's tendency to reserve roles for its biggest stars, even when a big star appears unfit for the role in question. Much of the pre-release journalism on *Exodus* concerned the contentious decision to cast white Hollywood actors in the story of Moses opposing the Pharaoh and leading the Israelites out of Ancient Egypt (Anonymous, 2014; Child, 2014; Palmer, 2014). Christian Bale, who was cast to play Moses, became a *de facto* spokesperson for the film and attempted to diffuse some of the criticism. Bale's defense of the casting decisions inadvertently reveals how these decisions were not made for lack of historically available alternatives: "I don't think fingers should be pointed, but we should all look at ourselves and say, 'Are we supporting wonderful actors in films by North African and Middle Eastern filmmakers and actors, because there are some fantastic actors out there'" (Anonymous, 2014). The obvious rationale for not casting fantastic North African or Middle Eastern actors instead of Bale and other white Hollywood actors is rooted in the financial goals of Hollywood – even Bale acknowledged this. However, such a rationale does not only downplay the racist element of this story, it actually obscures how Hollywood's *modus operandi* transforms a controversial choice about

casting into a so-called "rational" business decision. For instance, when Scott defended his film with the argument that he had to assemble the "best possible cast ... on a budget of this scale [$140 million]", he admitted to Hollywood's interest in profit but glossed over the main reason why narrow-minded casting decisions are the so-called "best" business strategies. The issue of repetitive or narrow casting in Hollywood is more institutional than it is about this or that individual; the "best possible casts" of a Hollywood blockbuster can be talented but they are also gilded through inequality; and a big effect of repeatedly casting someone like Bale is risk reduction for Hollywood's dominant firms.

Appendix

Section 2.4 explained how Hollywood cinema was defined for data analysis. The following is an alphabetically-sorted array of distributors used to filter films from IMDb, via Python:

["20th Century Fox", "20th Century Fox Argentina", "20th Century Fox Brazil", "20th Century Fox Entertainment", "20th Century Fox Home Entertainment", "20th Century Fox India", "20th Century Fox International", "20th Century Fox International Classics", "20th Century Fox Studios", "21st Century Distribution", "21st Century Film Corporation", "21st Century Films", "21st Century Pictures", "21st Century Studios", "A24", "Alliance", "Alliance Atlantis Communications", "Alliance Atlantis Home Video", "Alliance Atlantis Motion Picture Distribution", "Alliance Atlantis Video", "Allied Artists Pictures", "Amazon", "Amazon Instant Video", "Amazon Prime Video", "Amazon Studios", "Amazon.com", "American International Pictures (AIP)", "Artisan Entertainment", "Buena Vista Distribution Company", "Buena Vista Film Distribution Company", "Buena Vista Home Entertainment", "Buena Vista Home Video", "Buena Vista International", "Buena Vista International (Australia)", "Buena Vista International Finland", "Buena Vista International Mexico", "Buena Vista Pictures", "Buena Vista Pictures Distribution", "Cannon Film Distributors", "Columbia Pictures", "Columbia Pictures Corporation", "Columbia Pictures Home Entertainment", "Columbia Pictures Home Video", "Columbia Pictures Mexico", "Columbia Pictures of Canada", "Columbia TriStar", "Columbia TriStar Domestic Television", "Columbia TriStar Egmont Film Distributors", "Columbia TriStar Film", "Columbia TriStar Film Distributors", "Columbia TriStar Film Distributors International", "Columbia TriStar Films", "Columbia TriStar Films AB", "Columbia TriStar Films Pty. Ltd.", "Columbia TriStar Films de Argentina", "Columbia TriStar Films de España", "Columbia TriStar Home Entertainment", "Columbia TriStar Home Video", "Columbia TriStar Hoyts Home Video", "Columbia TriStar Nordisk Film Distributors", "Columbia TriStar Warner Filmes de Portugal", "Dimension Films", "Dimension Pictures", "DreamWorks", "DreamWorks Animation", "DreamWorks Distribution", "Dreamworks Distribution LLC", "Embassy Pictures", "Entertainment One", "Focus Features", "Focus Features International", "Fox Film Company", "Fox Film Corporation", "Fox Films", "Fox Searchlight Pictures", "IFC Films", "Lions Gate Entertainment", "Lions Gate Films", "Lions Gate Films Home Entertainment", "Lions Gate International", "Lions Gate Studios", "Lionsgate", "Lionsgate Home Entertainment", "MGM Home Entertainment", "MGM Networks Latin America", "MGM-EMI", "MGM/UA Classics", "MGM/UA Communications Co.", "MGM/UA Distribution Company", "MGM/UA Entertainment Company", "MGM/UA Home Video", "Metro-Goldwyn-Mayer", "Metro-Goldwyn-Mayer (MGM)", "Metro-Goldwyn-Mayer Distributing Corporation (MGM)", "Miramax", "Monogram Pictures", "Netflix", "New Line Cinema", "Orion Pictures", "Paramount British Pictures", "Paramount Classics", "Paramount Films", "Paramount Films of India", "Paramount Home Entertainment", "Paramount Home Media Distribution", "Paramount Home Video", "Paramount Italiana", "Paramount Network", "Paramount Pictures", "Paramount Pictures Corporation", "Paramount Pictures Digital Entertainment", "Paramount Pictures Germany", "Paramount Pictures International", "Paramount Television", "Paramount Vantage", "Paramount-Film", "Paramount-Ufa-Metro-Verleihbetriebe GmbH (Parufamet)", "RKO Pathé Pictures", "RKO Pictures", "RKO Radio Pictures", "RKO Radio Pictures S.A.", "RKO-Pathé Distributing Corp.", "Republic Pictures", "Republic Pictures (I)", "Republic Pictures (II)", "Republic Pictures Corporation", "Republic Pictures Corporation (I)", "Samuel Goldwyn", "Samuel Goldwyn Company", "Samuel Goldwyn Films", "Screen Gems", "Roadshow Films", "Sony", "Sony BMG Music Entertainment", "Sony Columbia Records", "Sony Digital Entertainment", "Sony Music", "Sony Music Entertainment", "Sony Music Media", "Sony Pictures Classics", "Sony Pictures Entertainment", "Sony Pictures Entertainment (SPE)", "Sony Pictures Filmverleih", "Sony Pictures Home Entertainment", "Sony Pictures Releasing", "Sony Pictures Television International", "Sony Pictures Worldwide Acquisitions (SPWA)", "The Weinstein Company", "Touchstone Pictures", "TriStar Pictures", "Twentieth Century Fox", "Twentieth Century Fox C.I.S.", "Twentieth Century Fox Film Company", "United Artists", "United International Pictures (UIP)", "Universal Pictures", "Universal Pictures Company Inc.", "Universal Pictures Content Group", "Universal Pictures Corporation", "Universal Pictures Corporation of Puerto Rico", "Universal Pictures Home Entertainment", "Universal Pictures Home Entertainment (UPHE)", "Universal Pictures International (UPI)", "Universal Sony Pictures Home Entertainment", "Walt Disney Animation Studios", "Walt Disney Attractions", "Walt Disney Home Entertainment", "Walt Disney Pictures", "Walt Disney Productions", "Walt Disney Studios Home Entertainment", "Walt Disney Studios Motion Pictures", "Walt Disney Studios Motion Pictures Argentina", "Warner Bros Pictures", "Warner Bros.", "Warner Bros. Digital Distribution", "Warner Bros. F.E.", "Warner Bros. Family Entertainment", "Warner Bros. Home Entertainment", "Warner Bros. Music", "Warner Bros. Pictures", "Warner Bros. Studios", "Warner Bros. Television", "Warner Bros./Seven Arts"]

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