



Ackerman, Frank. "Overview Essay: New Paths to the Top: CEO and Celebrity Compensation," Part III, Frontier Issues in Economic Thought, Volume 5: The Political Economy of Inequality. Island Press: Washington, D.C. 2000. pp.61-77.

Social Science Library: Frontier Thinking in Sustainable Development and Human Well-being

“New Paths to the Top: CEO and Celebrity Compensation” by Frank Ackerman

There is an unconventional form of inequality which fascinates the public but fits poorly, if at all, into standard economic theories. A certain number of people with little or no capital, and with only slightly greater skills and abilities than others, become famous, rise to the top of their profession, and receive enormous incomes. Others, nearly or equally as skilled, continue to work hard at similar endeavors and earn very ordinary incomes. The lifestyles of the rich and famous receive endless attention in the mass media; can economists explain the incomes of the rich and famous?

Celebrity and CEO compensation is not an insignificant part of the story of inequality. Many of those at the peak of the income distribution today got to the top by being a star in entertainment or sports, a leader in a profession such as law or medicine, or a top executive in business. In his book *Money*, Andrew Hacker estimates that athletes, movie stars, lawyers and CEOs account for perhaps 4,000 of the 58,000 working-age households with at least \$1 million in taxable income in 1994.¹

This is qualitatively different from the longstanding pattern in which affluence is based on the development and ownership of successful businesses or natural resources. Within that older paradigm, new businesses and newly wealthy owners have frequently emerged. Bill Gates and other computer industry entrepreneurs provide well-known contemporary examples. Yet despite the novelty of his enterprise, Bill Gates has in essence followed the path taken long ago by the Carnegies, Rockefellers, and DuPonts. That is, he has prospered from success in business, based on a monopoly position in a rising industry.

Michael Jordan, Jerry Seinfeld, Oprah Winfrey, Walt Disney executive Michael Eisner, and others like them have also become immensely rich, but not, at least initially, because of their ownership of businesses or corporate stock. Rather, as stars in their fields, they have been successful in winning compensation far beyond what was imaginable a generation ago.

This essay explores the "celebrity/CEO" style of compensation and its implications both for economic theory, and for our understanding of the dynamics of inequality. The discussion begins with general social critiques and theoretical perspectives; it then turns to the separate economic analyses of CEO compensation on the one hand, and the salaries of sports stars and

entertainment celebrities on the other hand; and finally concludes with a hypothesis about the economic changes that have allowed these new forms of affluence.

TOO MUCH COMPETITION, OR TOO LITTLE?

In *The Winner-Take-All Society*, **Robert Frank and Philip Cook** suggest that there is a spreading pattern of huge rewards for being “number one” in some competitive endeavor. This, they argue, is distorting resource allocation, drawing labor skills and effort away from important, productive tasks that receive ordinary levels of compensation.

The pattern which Frank and Cook describe as "winner-take-all" markets has been analyzed by economic theorists under the rubric of tournament theory. This theory (originated by Lazear and Rosen 1981) observes that in some occupations, people are paid for their relative, not absolute, performance. A sports tournament with a fixed prize for the first-place contestant is a classic example, but there are many others. Conventional systems of pay based on an absolute measure of productivity can be compared to school grading with a fixed standard of what constitutes an A, B, etc. Tournament-style pay scales can be compared to grading on a curve, in which the best student is sure to get an A regardless of the level of absolute accomplishment.

Tournament pay is attractive to employers in circumstances where it is difficult to establish appropriate absolute performance standards, or to monitor absolute individual accomplishment. This may explain the popularity of incentives such as bonuses for the sales representative who sells the most. In theory, Lazear and Rosen show that there is a set of tournament “prizes” (for those who do not come in first, as well as those who do) that will inspire exactly the same level of effort and lead to the same allocation of labor as a conventional pay scale. Preferences between equivalent tournament and conventional pay scales depend on the degree of risk aversion, among other factors.

The burgeoning discussion of tournament theory in the economics literature has largely failed to address the question that is central for Frank and Cook: why are "tournaments" or winner-take-all markets becoming more common, and the top prizes becoming larger? Frank and Cook suggest a range of possible explanations. The declining cost of communication and transportation increases the size of markets, creating economies of scale in production and distribution that allow individual firms (and entertainers) to reach more people. Network economies and learning curves cause "lock-in," so that technologies and producers that gain an early lead are hard to displace. Prestige and reputation are important factors when decisions are made on the basis of limited information; this creates positive feedback, since the best-known individuals become even better known. The "mental shelf space" constraint, that is the limit on the number of different firms, individuals, and activities that anyone can remember, leads to ever-intensifying competition to be well enough known to be on the shelf.

This list may or may not contain the right answer to the original question. Indeed, the passage from *Winner-Take-All Society* summarized here could perhaps be faulted for offering glimpses of too many different answers, without a clear evaluation or discussion of the

relationship among them. However, Frank and Cook unmistakably asked the right question – and for that, their book deserves much greater attention than it has received from the economics profession (see, e.g., the largely dismissive review by Rosen 1996).

While Frank and Cook argue that excessive competition is driving up celebrity and executive salaries, **Derek Bok** reaches an opposite conclusion. Analyzing the escalation of executive and elite professional salaries since the early 1970s, Bok concludes that the problem is that doctors, lawyers, and CEOs have too much control over their own compensation. The services they provide are unique and differentiated, so that there is a potentially large payoff to getting the best possible candidate for the job; but those who make the hiring and salary decisions are inevitably poorly informed about the relevant professional qualifications, or about the pool of alternative candidates. Thus the job-holder often plays a major part in advising his "employers" about how much to pay him. In the extreme, a corporate CEO often picks the members of the compensation committee that sets the salaries for top executives, including the CEO himself. According to Bok, the acceptability of escalating salaries may stem in part from the politics of the Reagan years, which brought greed back into fashion.

Bok's image of collusion at the top leads to conclusions similar to Frank and Cook's picture of excessive competition. According to Bok, top executives and elite professionals are, in general, overpaid. The high salaries in these fields distort the allocation of talent, pulling capable people away from lower-paid but socially important fields such as teaching and public administration. And there is often no effective way to structure a merit pay system to motivate hard work for socially desirable goals. The last of these points is particularly important in the discussion of executive compensation.

THE PRICE OF MANAGEMENT

CEO compensation has been rising rapidly in recent decades. As seen in Table 3.1, during the stock market boom of the late 1990s a few executives received more than \$100 million, and many more received tens of millions of dollars, for a single year's work. Among those shown in the table, only Henry Silverman founded the company he now heads; Cendant is a real estate and business services company, with about \$5 billion in revenues in 1998. Although several of the top-earning CEOs are, by now, owners of a significant fraction of their company's stock, it is unlikely that any were when they entered the job. Many of the companies shown in Table 3.1 did very well in the 1990s, with returns to stockholders significantly above the market average; however, there were exceptions. In 1998, America Online lost money, while Walt Disney and Citigroup had below-average returns to stockholders. Moreover, there were other companies that did very well in market terms, but paid their CEOs much less.

Table III.1. The Highest-Paid CEOs in 1998

Rank	Name	Company	Total Compensation (millions of dollars)
1.	Michael Eisner	Walt Disney	576
2.	Mel Karmazin	CBS	202
3.	Sanford Weill	Citigroup	167
4.	Stephen Case	American Online	159
5.	Craig Barrett	Intel	117
6.	John Welsh	General Electric	84
7.	Henry Schacht	Lucent Technologies	67
8.	L. Dennis Kozlowski	Tyco International	65
9.	Henry Silverman	Cendant	64
10.	M. Douglas Ivester	Coca-Cola	57
11.	Charles Heimbold	Briston-Myers Squibb	56
12.	Phillip Purcell	Morgan Stanley Dean Witter	53
13.	Rueben Mark	Colgate-Palmolive	53
14.	Scott McNealy	Sun Microsystems	48
15.	Louis Gerstner	IBM	46

Source: *Business Week*, April 19, 1999.

It is not only the handful of CEOs shown in Table 3.1 who did exceedingly well. An annual survey by *Business Week* and Compustat reports on the compensation of the highest-paid executives at 365 of the largest U.S. companies. Average CEO compensation rose 36% in 1998, compared to 2.7% for the average blue-collar worker and 3.9% for the average white-collar worker. The average CEO in the survey made \$10.6 million, 80% of it from long-term compensation (primarily exercised stock options). That is a 442% rise above the 1990 average of just under \$2 million; virtually all of the increase is due to the soaring value of stock options. However, CEO compensation rose even faster than the stock market in 1998; the Standard & Poor 500 stock index increased 26.7% for the year. (*Business Week*, April 19, 1999)

The average CEO compensation was also 419 times the pay of the average blue-collar worker in 1998. Similar comparisons of the incomes of CEOs to average workers can be found throughout the literature of the last twenty or thirty years; although observers have routinely been shocked at how high it was, the ratio has continued to rise. A future archaeologist could date late twentieth century business periodicals quite accurately by referring to their astonished statements that a CEO now makes x times as much as a typical worker – with ever-increasing values of x .

Most analysts agree that salaries have risen far faster than any measure of CEO productivity. One common argument – by now it could be called the new conventional wisdom – says that huge CEO compensation is necessary to overcome the “principal-agent” problem. The problem is that, although the CEO is hired by and works for the stockholders, his incentives are different from theirs: he will tend to choose actions that make executive life more comfortable and better-paid, even at the expense of profits; and they cannot monitor his behavior in enough detail to prevent all such choices. Generous compensation in the form of stock, or stock options, is said to solve the principal-agent problem, making the CEO represent stockholders’ interests by making him a stockholder. (Male pronouns are used here in the

interests of accuracy: *Forbes* reports that more than 99% of the top 800 corporate CEOs are men.)

Michael Jacobs vigorously rebuts the principal-agent argument for high CEO salaries, based in part on his own experience in business. Incentive compensation schemes for management cannot work, in his opinion, for at least three reasons. First, it is hard to apply incentive pay plans to those below top management, although they make many crucial decisions. Second; it is prohibitively expensive to set up rewards big enough to make a significant difference to an already well-paid top executive. Finally, any compensation scheme has unintended consequences due to inescapable areas of divergence between CEO and stockholder interests. As *Business Week* said in its review of 1998 CEO compensation, “No academic has proven that higher pay creates higher performance.” For Jacobs the deeper problem is the decline of mechanisms that formerly ensured corporate accountability: stockholders, banks, and government regulators are all playing weaker roles in corporate governance than they did in the past. As a result, CEOs can drive up their own salaries in the manner described by Bok.

Paying CEOs with stock options may appeal to businesses because it appears to be an easy, costless way to reward their leaders – and, increasingly, other employees as well. Yet, as an article in *Forbes* observes, taking the easy way out does have its costs. Issuing stock options dilutes the equity and the future earnings of other stockholders.² By 1998 the 200 largest U.S. corporations had allocated shares to management and employee stock option plans equal to 13.2% of their outstanding stock. If stock options were counted as a cost to the companies that issued them, then 11 of the 100 largest U.S. companies, including Microsoft and Intel, would have reported net losses in 1996 (Morgenson 1998).

As serious as the principal-agent problem is the question that top CEO salaries raise in the minds of many people: How much is enough? What could anyone do with tens of millions of dollars, and why would anyone at that level continue striving for more? The paradigm of market incentives threatens to break down when applied to people who can afford to satisfy their every whim, and have probably bought more toys than they will ever have time to play with.

For those at the top, it is hard to imagine desires for any end uses of additional money. More plausible, for the extremely competitive individuals who make it that far, is a desire for the reputation and status that accrue to those who make more than others. Information like that in Table 3.1 is widely available in the business world, and it is likely that CEOs, board members, and others judge an executive’s success in part by his standing relative to CEOs elsewhere. While the names listed in the table are not household words to most of us, they are celebrities within their world of business executives, and their gains define what is possible in the field of CEO compensation. Paying “only” half a million dollars a year to someone who runs a major company – a lavish salary by any absolute standards – would be taken as a sign that the company and/or the CEO had fallen far below the prevailing standards of corporate success.

Such considerations, unfortunately, rarely enter the academic literature on CEO compensation. In that literature, a widely discussed article by Jensen and Murphy (1990) takes an iconoclastic stance toward the new conventional wisdom on the principal-agent problem.

They argue that CEO pay is remarkably insensitive to stockholder interests; their extensive database shows that in the 1980s the change in CEO net worth averaged only \$3.25 per \$1,000 change in stockholder wealth. This is not nearly enough to solve the principal-agent problem, since it is still easy for CEO personal interests to diverge from stockholder interests. One possible interpretation of this finding is that CEOs are not paid enough! Principal-agent theory implies, for risk-neutral CEOs, the absurd conclusion that the optimal contract would give 100% of any change in stock value to the CEO.

Many articles have responded to Jensen and Murphy on both theoretical and empirical grounds. Theorists reply that principal-agent theory is actually ambiguous or underspecified when it comes to the questions of CEO incentives and preferences. It is possible to hypothesize a set of relatively plausible preferences that might be held by CEOs and others, which would make the Jensen and Murphy findings consistent with principal-agent theory (Haubrich 1994, Garen 1994).

Findings like this suggest that it is hard to pin down just what principal-agent theory has to say about any particular problem. Along these lines Herbert Simon (1991) offers an interesting critique, building on his well-known advocacy of “satisficing” or bounded rationality models of behavior. Simon criticizes principal-agent and related new theories for maintaining the problematical assumption that everyone really is optimizing, albeit in a much more complicated environment than the one assumed by neoclassical economics. In fact, the added complexity of the new approaches means that, as in the responses to Jensen and Murphy, anything could happen. An impossibly large amount of information would be needed to obtain any definite predictions about the world from such theories.

Empirical research has challenged the Jensen-Murphy finding that CEO pay is insensitive to corporate performance. Companies that are financially distressed do take it out on their CEOs at times, with salary cuts and/or dismissal, often followed by promotion of an inside candidate at lower salary, as shown by Gilson and Vetsuypens (1993). On the other hand, Boschen and Smith (1995) show that while CEO compensation may rise only slightly in the year of performance gains, it remains higher for several years. The cumulative CEO compensation response to a corporate performance gain is roughly ten times the immediate response.

A variant on the link between pay and performance is presented by Yermack (1997), who demonstrates the astonishingly good timing of CEO stock option awards. Such awards typically give the option to buy stock in the future at the price prevailing on the date of issue. Yermack shows that CEO stock options are extremely likely to be awarded shortly before favorable news drives up the price of the company’s stock. The only believable explanation is that CEOs use inside information to schedule their stock awards at times when they know there is about to be an increase in the value of the stock (and therefore an increase in the value of their options to buy it).

A piece of the puzzle that fits poorly with many academic analyses is the wide international variation in CEO compensation levels. Table 3.2 presents typical CEO compensation for moderate-sized industrial companies in ten countries. The other countries

ranged from 14% to 65% of the U.S. level, with Japanese and German CEOs receiving less than 40% as much as their American counterparts.

Table III.2. CEO Compensation around the World, 1998

Country	Average annual compensation for CEO of industrial company with sales of \$250–\$500 million (thousands of U.S. dollars)
U.S.	1,072
Brazil	701
Hong Kong	681
Britain	646
France	520
Canada	498
Mexico	457
Japan	421
Germany	398
South Korea	151

Source: *New York Times*, January 18, 1999. Original source: Towers Perrin (a consulting firm).

Kaplan (1994) compares CEO compensation in the US and Japan. Despite great differences in business culture, expectations, and management styles, the response (elasticity) of compensation to measures of firm performance is quite similar in the two countries. Kaplan’s finding is expressed in terms of elasticities, or percentage changes – but these are percentage changes around very different average levels. Despite the far lower rate of CEO compensation in Japan, leading Japanese firms are still thought to be world-class competitors in most industries.

Returning to the underlying theoretical issues, **Brian Main, Charles O’Reilly, and James Wade** argue that CEO compensation is far higher than any plausible measure of marginal product. They suggest that CEO pay may intentionally resemble a tournament, with corporations seeking to boost productivity by creating the winner-take-all effect that Frank and Cook deplore. If people like to gamble, or if they overestimate their own relative standing and chance for the prize, then tournament-style competition will induce a large quantity of high-quality effort from all those who think they have a chance at first place. Like Boschen and Smith, this study emphasizes multi-year gains: becoming CEO has a small initial effect, but a large lifetime present value, compared to remaining a vice-president for the rest of your career. The limit on the tournament mechanism is the need to promote teamwork, or at least restrain cutthroat competition: too much inequality of rewards makes life too unpleasant for the competitors, or makes them too unpleasant to each other, for the organization to function.

The tournament metaphor fits some, but not all, of the facts of executive life. Main et al. find evidence that a successful corporate career involves many small raises, not just a few big jumps as suggested by the simplest forms of tournament theory. Similarly, in a thoughtful, brief comment, Rees (1992) lists several ways in which the tournament model is not appropriate for executive compensation: the time frame is too long, the nature of the game being played changes as you move up through the ranks, the losers are not free to enter next year’s tournament on

equal terms, all contestants do not enter at the same level, success depends on external events and on the performance of nonmanagerial employees, and the “prizes” must simultaneously reward past performance and provide incentives for future efforts.

THE PRICE OF CELEBRITY

The winner-take-all model describes celebrity and entertainment at least as well as management. There are three areas of analysis to examine: a theoretical literature on the economics of celebrity; a detailed literature on the salaries in sports; and a much more limited discussion of other forms of entertainment.

The “economics of superstars” (introduced by Rosen 1981; see also MacDonald 1988) offers a possible explanation for the increasing, and increasingly unequal, rewards for top performers. If consumers prefer the best performer, even when quality differences are slight, and all performers face similar, rapidly increasing returns to scale in producing recordings, TV broadcasts, or other output, then small quality differences will explode into huge income differences – a process which, as described by Frank and Cook, often reaches absurd levels.

Are any quality differences at all necessary to explain stardom? Adler (1985) argues that, if people want to talk to other fans of the performers they listen to, and if search time is limited (a concept similar to Frank and Cook’s “mental shelf space” constraint), it will be more attractive to listen to performers who are already popular. Small random differences in sales then can snowball into huge inequalities, even if all performers offer identical quality. To explain why there is more than one star at a time, Adler suggests that an offsetting taste for diversity may arise at very high levels of consumption, while the need for abundant fellow fans dominates at low levels.

Similar notions arise more generally in connection with network externalities (see Katz and Shapiro 1994, and literature cited there). Your telephone is more valuable if more other people have phones; your computer has more software written for it if more people have the same kind; your car can be serviced in more places if more people own the same make. No quality differences are necessary for the market to tip toward one producer in the presence of strong network externalities. Indeed, as shown by Arthur (1989), the results are path-dependent, and it is possible for society to lock into an inferior technology that gains an early lead.

These arguments can easily be extended to the economics of stardom, although there are also some differences. The costs of switching allegiance to a new star, while not zero, are small in comparison with the costs of switching phone systems or computers. Thus permanent lock-in is less likely, but the market can still tip one way or another, regardless of quality.

One step beyond the economics of stardom is the analysis of “mob goods” – experiences such as rock concerts or sports events, where the performance is enhanced by crowd reaction (DeSerpa and Faith 1996). Suppose that consumers like events better and are willing to pay more if there are more other people there. Then the demand curve slopes upward; if it is steeper than the supply curve, it is possible that there is excess demand for tickets at the going price,

even when the suppliers (concert promoters) maximize profits. In the 1998 World Cup, despite the quite audible cheering of French fans, the captain of the winning French soccer team reportedly said that the crowd was too quiet, since the stands were full of “suits in expensive seats”, and the “real fans” couldn’t get in.

SPORTS

It is hard to tell which is more striking in the literature on the economics of sports: the density of jargon and sports babble, presented without apology or explanation – or the obvious passion and enthusiasm of the economists who write about it. Imagine that you were somehow never called in at the end of recess, but stayed out as the school year became an endless summer, and found that the subject of econometrics was used solely to analyze sports statistics. Imagine, that is, that you are a sports economist. What would you choose to study?

In fact, the economics of sports focuses particularly on baseball, presumably reflecting the preferences of the economists involved. Other sports now draw bigger audiences and, as seen in Table 3.3, other sports now pay higher top salaries. Michael Jordan, the premier athletic superstar of the 1990s, of course leads the list; but in general, the top pay in basketball, boxing, and auto racing is well ahead of baseball.

Table III.3. The Highest-Paid Athletes in 1997

Rank	Name	Sport	Sports	Endorsements	Total
			earnings		
(all amounts in millions of dollars)					
1.	Michael Jordan	basketball	31.3	47.0	78.3
2.	Evander Holyfield	boxing	53.0	1.3	54.3
3.	Oscar de la Hoya	boxing	37.0	1.0	38.0
4.	Michael Schumacher	auto racing	25.0	10.0	35.0
5.	Mike Tyson	boxing	27.0	0	27.0
6.	Tiger Woods	golf	2.1	24.0	26.1
7.	Shaquille O’Neal	basketball	12.9	12.5	25.4
8.	Dale Earnhardt	auto racing	3.6	15.5	19.1
9.	Joe Sakic	hockey	17.8	0.1	17.9
10.	Grant Hill	basketball	5.0	12.0	17.0
and top earners in selected other sports:					
15.	Pete Sampras	tennis	6.5	8.0	14.5
17.	Cal Ripken, Jr.	baseball	6.7	6.5	13.2
33.	Barry Sanders	football	8.4	1.8	10.2
—	Rolando (Brazil)	soccer	4.0	NA	NA
—	Laurent Jalabert (France)	cycling	2.1	NA	NA

Source: *Forbes*, December 15, 1997.

It is fortuitous that so many American economists enjoy a sport like baseball, which has such comprehensive, individualized performance statistics. In soccer, in contrast, there is nothing corresponding to batting or pitching averages, and success in scoring goals does not provide a complete measure of individual ability. Thus it would have been difficult for sports economics to develop in Europe or Latin America. Meanwhile, American economists have

learned an immense amount about the relationship between major league baseball performance and salary (and other aspects of the "political economy of baseball" as well; see Zimbalist 1992).

As **James Quirk and Rodney Fort** and others show, slight quality differences are important in determining the salaries of sports stars. So is the structure of the market for pro athletes. "Free agency" – the freedom of players to change teams at will in search of a better deal – helps players win larger salaries. Baseball salaries went up sharply after free agency was adopted in 1976; salaries in the 1980s were far higher in baseball and basketball than in pro football, where team owners retained greater control over negotiations.

However, Quirk and Fort argue that it was the growth of television broadcast revenues that made the explosion of baseball salaries possible – the sale of TV rights expanded the pool of money available, and free agency allowed star players to win substantial chunks of it. Their data shows a steady rise in attendance at major league sports events, noticeably faster than population growth, perhaps reflecting better marketing, league expansion, and movement of teams into new, growing metropolitan markets. There was also an abrupt explosion in television revenues in the early 1980s, as shown in Figure 3.1.³ The graph also shows that football did even better than baseball in winning much higher payments from television at that time, while basketball followed a few years later. (Football and basketball revenues continued to rise in the 1990s, while the major league baseball strike of 1994 accounts for the dip near the end of the baseball line in the graph. A minor puzzle -- broadcast revenues are lower, but salaries are higher, in basketball than in baseball or football -- is explained by the fact that basketball teams are smaller, so the players' share of the revenues is divided into fewer salaries.)

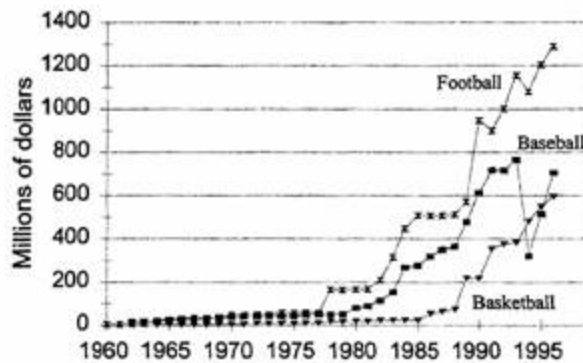


Figure III.1. Sports Broadcast Revenues, 1960–1996

Sources: 1960–1990 data excerpted from pages 505–511 in James Quirk and Rodney Fort, *Pay Dirt: The Business of Professional Sports*. Princeton: Princeton University Press, 1992; 1991–1996 data excerpted from pages 189–193 in James P. Quirk, *Hard Ball: The Abuse of Power in Pro-Team Sports*. Princeton: Princeton University Press, 1999.

Regression analysis shows that there is a clear relationship of baseball salaries to performance variables. Free agency led to an increase in many coefficients (i.e., the value of the same level of performance went up) and in the constant term (i.e., the base salary that players receive independent of performance went up). Interestingly, the amount of salary variation

explained by the regression (r^2) drops from .8 to .5 after free agency. The freer bargaining process may introduce noise, or errors in rewarding performance. And inequality is growing: as the average salaries in major league baseball have risen, so has the spread among those salaries. Before free agency, the Gini coefficient for major league baseball players was comparable to that of the U.S. as a whole. Today, Baseball Nation is approaching the levels of income inequality found in the world's most unequal countries. (For Gini coefficients for many professional sports leagues, see Scully 1995, p. 74. Hockey is the most equal, and golf the most unequal, of the sports shown there.)

Dale Oorlog offers his own version of the relationship between individual performance and salary, with a focus on the distinction between spectator revenue and broadcast revenue. It is a logically straightforward, though computationally intricate, process to calculate the relationship between individual ballplayer performance and spectator revenue. Attendance is quite sensitive to the number of games won, so a better player helps his team win more and brings in more money at the stadium. Salaries could, therefore, be based on the marginal increase in revenues that each individual earns for the team, as suggested by economic theory.

However, broadcast revenue is large, and is growing faster than stadium revenue; for many teams, aggregate players' salaries exceed stadium revenue. Broadcast revenue does not depend on the team's number of wins or other performance measures, so there is no meaning to an individual player's broadcast revenue. Strictly speaking, every player's marginal contribution to broadcast revenue is zero. This means that salaries based solely on marginal contributions to team revenue would lead to the players receiving no share of broadcast revenues. According to Oorlog, this may explain the frequent labor disputes in baseball; collective action is the only way for the players to win part of the teams' fast-growing TV earnings.

What happened to TV in the early 1980s that made possible the jump in payments for sports broadcast rights? This was the period when cable became an effective competitor to the broadcast networks. (See Vogel 1990, the source of much of this account.) To recap the history of TV: the tube arrived in American living rooms in the 1950s, achieving less than 10% market saturation at the beginning of the decade, but more than 90% by the end. From 1965 to 1975, weekly hours of TV viewing per adult increased from 10 to 15, as color TV sets arrived (Robinson and Godbey 1997); sports viewing may have been a big part of the increase for men. But as late as 1970, the dominance of the three traditional broadcast networks was reflected in laws that placed severe, arbitrary restrictions on what could be shown on cable. These laws were challenged and repealed over the course of the 1970s, leading to drastically increased competition for popular programs such as leading sports events. TV rights for U.S. broadcast of the summer Olympics cost a mere \$7.5 million in 1972, versus \$225 million in 1984 (Vogel 1990, p.388).

ENTERTAINMENT

Can a similar story be told about other media, explaining the rise of stardom in other fields? Economists have paid far less attention to music, art and other forms of entertainment than to sports. However, the top incomes are much greater in the larger entertainment world, as seen in Table 3.4. The numbers shown here are enormous, even without the extraordinary income received by Jerry Seinfeld and one of his principal writers for multi-year syndication rights. If the *Forbes* lists of the 40 best-paid entertainers and athletes were combined, only four athletes would appear above the 40th entertainer (Julia Roberts, with \$28 million). In broad socioeconomic terms, professional athletics could be described as simply a branch of the entertainment industry, and far from the biggest branch at that – although one that is particularly prized by many advertisers for its demographics, i.e. its ability to reach an adult male audience.

Table III.4. Top Entertainment Incomes in 1997

Rank	Name	Principal source	Income (millions of dollars)
1.	Jerry Seinfeld	TV: <i>Seinfeld</i> syndication rights	225
2.	Larry David	TV: <i>Seinfeld</i> syndication rights	200
3.	Steven Spielberg	Dreamworks movie studio	175
4.	Oprah Winfrey	Talk show	125
5.	James Cameron	<i>Titanic</i> director	115
6.	Tim Allen	TV: <i>Home Improvement</i> syndication rights	77
7.	Michael Crichton	Movie scripts, books	65
8.	Harrison Ford	Movie actor	58
9.	Rolling Stones	Rock music	57
10.	Master P	Rap music	56.5
11.	Robin Williams	Movie actor	56
12.	Celine Dion	Singer	55.5
13.	Mel Gibson	Movie actor	55
14.	Garth Brooks	Country music	54
15.	Sean (Puffy) Combs	Rap music	53.5
16.	Mike Judge	Cartoons (<i>Beavis & Butthead</i> ,	53
17.	Greg Daniels	<i>King of the Hill</i> co-creators)	53
18.	Chris Carter	TV: <i>X-Files</i> script writer	52
19.	David Copperfield	Special effects	49.5
20.	Spice Girls	Pop music, merchandise	49

Source: *Forbes*, September 21, 1998.

The explosion of incomes has an obvious economic basis in some cases. For recorded music, the arrival of high-fidelity home stereos in the 1960s, cassette tapes in the 1970s, and CDs in the 1980s allowed steady expansion of the market. The superstars of popular music have a major economic impact by many measures: for example, the annual concerts by the Grateful Dead in Las Vegas in the early 1990s had direct and indirect employment effects equivalent to the creation of 300-600 full-time year-round local jobs (Gazel and Schwer 1997).

For films, there is more of a mystery to the rising incomes of the stars. Real U.S. expenditure on movie theater attendance peaked in the early 1940s, fell to about one-third of the peak level by the late 1960s, and remained more or less flat through the 1970s and 1980s (Vogel 1990, p.38). Videocassette sales, pay cable, and foreign sales allowed some expansion of the market, though less dramatically than for sports or music. Corresponding to the vast outpouring of economic analysis of baseball players' performance, there are apparently just a few studies of the effects of individual movie stars on film revenues (e.g., Wallace, Seigerman and Holbrook 1993, Prag and Casavant 1994).

Can performance quality be objectively measured in music? An intriguing and slightly discordant note is struck by Hamlen (1991). He claims to measure the voice quality of the top-selling singers of 1955-87, and finds it has a significant correlation with sales, but far too low an elasticity to fit the superstar model. If, as the model suggests, small quality differences yield big returns, the quality-elasticity of sales should be above 1; Hamlen estimates it at 0.14. His voice quality rankings, though said to be based on objective measurements, are certainly subject to debate: he places Barbra Streisand first, followed by Bing Crosby, Frank Sinatra, George B. Shea, and John Denver. Of these five, only Streisand was among the top ten in sales.

A different study of the sales of best-selling "gold records" from 1958 to 1989 found their distribution to be almost precisely what would be expected from Adler's theory, as discussed above, i.e. assuming no quality differences (Chung and Cox 1994). Since the time period for this article and Hamlen's are so similar, it is surprising that there are substantial differences in their lists of the best-selling singers. The Chung and Cox list, which includes Elton John, the Rolling Stones, and Aretha Franklin among the top 10, seems easier to believe than the Hamlen list, which does not include any of these three in the top 20.

Finally, a unique study deals with the economics of classical singing, by an author who is trained in both fields. Although stardom here may not bring the same financial rewards as in more popular, mass market entertainment, Ruth Towse (1993) finds the analysis of the economics of superstars relevant to classical music, introducing new levels of inequality among performers of similar ability levels. In her view, the market is efficient but cruel; there is no alternative to market-based allocation of labor and rewards, but there is also a need for public subsidies for training in culturally valuable fields such as singing. For an American reader, the most surprising aspect of her analysis may be the extent to which public subsidies to the arts are taken for granted in Britain.

COMMON THEMES

What do these varied new paths to the top of the income distribution have in common? Why are so many activities now structured by winner-take-all markets with explosively growing top prizes? One common cause is the introduction of new technologies in communication, transportation, and other areas, enlarging the effective size of markets and thus creating new economies of scale. Even in the largest industries this may lead to the creation of new, giant competitors, along the lines of DaimlerChrysler. Music and films are increasingly marketed worldwide, allowing bigger audiences and incomes for the most popular performers. In sports, although performances and spectator loyalties are more localized, there is an increasing role for nationwide and worldwide broadcasts of the Olympics, the World Cup, and other championship events.

This expansion of the sphere of competition has a damaging psychological effect on all but the very best contestants. In an earlier era the summit of an individual's ambition might have been to be the most acclaimed singer, dancer, movie star, or athlete in Paris, in Calcutta, or in Philadelphia. Now many performers feel that anything less than "world class" status has little meaning. As the notoriously competitive sound bite on the Olympics puts it, "You don't win the silver, you lose the gold." One result is that the satisfaction of adequate performance and even local fame are overwhelmed by the elusive nature of superstar achievement.

Another common cause is the breakdown of conventional structures and restraints on the market. Before free agency in sports, the owners controlled teams and players, and conventional notions of a reasonable distribution of salaries were easier to enforce. Likewise, before cable TV the three traditional networks controlled television. And in days past, CEOs were restrained by powerful individual stockholders, banks, and government regulators – and rarely jumped from one industry to another. As much as the U.S. economy of 25-50 years ago appeared to be dominated by market forces, it now appears in retrospect that an institutional structure of non-market conventions (and conventional uses of monopoly power by entrenched owners) still governed many patterns of distribution.

In a process much like that described by Karl Polanyi for earlier times, the spread of market relationships has continued to erode past conventions and to undermine past monopolies. Yet new positions of monopoly power are being created by technological and cultural change, along the lines discussed in this essay. It is hardly surprising that a new wave of self-seeking behavior has resulted; there is no reason to think that it has crested. As winner-take-all markets continue to expand, the identities of the winners may be unexpected, but not the process that allows someone to win.

Does the compensation of celebrities and CEOs violate the tenets of standard economic theory? Superstar salaries may often be consistent with the notion that rates of pay in a competitive market economy are based on the marginal revenue produced by individual workers. Entertainers who are seen and heard by audiences of millions may actually be bringing in revenues that match their soaring salaries. The same could be true for those CEOs who actually

lead their companies to new heights of profitability (though this does not describe all well-paid executives).

Yet if bloated pay is based accurately on bloated marginal revenues, a second pillar of the conventional theoretical edifice has been removed. In a perfectly competitive economy, pay is based on marginal revenue – *and* marginal revenue reflects a market-based judgment about the social value of each person's labor. (This may not be the best way to determine social value, but it is the only way that the market provides.) The competitive market's judgment of each person is confirmed by the other available opportunities for employment. Everyone could, in theory, go elsewhere and still earn their current salary; there are no positions of monopoly power that allow the incumbents to earn greater salaries than they would in their next-best alternatives.

Celebrities and CEOs clearly occupy monopoly positions, where the equation of marginal revenue and social value no longer applies. There is no possibility of earning the same salary elsewhere: a pop singer without a microphone, a baseball player without a bat, and a CEO kicked out of the corner office would be just three more faces in the crowd, not multi-millionaires. It is not the personalities of the incumbents, but rather the underlying structure of profoundly and needlessly unequal opportunity, that challenges familiar economic theories and violates a sense of fairness.

Notes

1. Hacker (1997), 73-81. There were 68,064 households who filed tax returns with over \$1 million in income in 1994, of whom 10,509 received Social Security checks (implying that they were over 70, the age at which Social Security is available regardless of other earnings). The total of 4,000 in identified professions combines several separate estimates made by Hacker. Hacker's lists of identifiable top earners do not include any entertainers other than movie stars, nor any athletes in sports other than baseball, basketball, football, and hockey.
2. If a hypothetical company has 10 shares of stock outstanding, each share is worth 1/10 of the value of the company and receives 1/10 of the dividends. If one more share is then issued to the CEO, each of the other shares drops in value to 1/11 of the company, and receives 1/11 of the dividends.
3. The graph combines data from two sources using slightly different definitions, Quirk and Fort (1992) and Quirk (1999). They are in reasonably close agreement for 1990 and 1991, the two years of overlap.