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Economics of Failure in Movies after the Big Crisis

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Introduction

Often economists and businessmen complain that capitalism is Hollywood big villain, and that the movie industry promotes a negative view of business as a realm of greed and moral corruption. The following paper is meant to analyze to a deeper extent the process by which the movie industry contributes to promote certain prejudices in the public understanding of economics.

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Instead of looking for a general anti-capitalist bias, I will analyze a specific concept, that of economic or business failure, in the years immediately before and after the big crisis of the late 2000s.

Economists are aware that failure is a normal fact, and a vital feature of the market system. Still, during periods of hard recession policies meant to prevent business failure are advocated and implemented, against the most basic principles of economics. A policy that is clearly economic unsound but yet finds popularity is a political economy problem, and I will argue that those problems are most likely to occur when there is a hiatus between the expert knowledge and a laymen understanding of a concept. The hiatus dimension is inversely proportional to the technical complexity of a concept, and paradoxically laymen disagrees the most with those economic ideas on which the scientific community agrees the most. In section 1 I will explain the process of complex representation of economic concepts and how it affects the political economy problem. Narratives play an important role in shaping the public debate because when confronted with economic concepts, laymen tend to interiorize and then use a version of those concepts filtered through their personal experiences and intuitions. In section 1 I will explain how artists, and filmmakers in particular, play a vital role in the production of those narratives that will affect the consumer understanding of economics. Still, filmmakers are part of a cultural élite, which most likely has been exposed to some introductory level of economics: in section 3 I analyze whether economic textbooks do convey a convincing explanation of the beneficial function of economic failure. In section 4 I will further analyze the relationship between filmmakers and economics. I build on three complementary explanations: lack of understanding or interest for economics; resentment toward the market as a consequence of the production structure of the movie industry; complex representation of economic concepts. While the first two influence the general attitude toward markets, the latter is concept-specific, and I will work on the example of economic failure.

In section 5 I will analyze significant movies produced in the time frames 2004-2007 and 2008-2011 in light of what discussed before. A macro-analysis will be applied on a database of 240 movies, which are particularly relevant they met the appreciation of either the public or the critics. Through qualitative, the macro-analysis is meant to descry trends and variations in the narratives of economic failure before and after the big crisis. In section 6 I will use the framework developed in the previous sections to understand what's preventing movies to give sound representation of the concept of economic failure, arguing that the anti-business bias is a different phenomenon than the complex representation of failure, and the latter is inversely affected by the complexity of the topic.

1 Narratives and complex representations of economics

Economics is a science of complexity, which tries to explain unintended results of interaction among individuals who do not share a common purpose. Its goal is to foresee those consequences that are not instantly visible. As such, the way economists thinks is often radically different form the way laymen do, and the latter systematically disagree from the most widely accepted opinions in economic science. (Caplan 2002). When economists use concepts such as rationality, profit, cost, trade, competition and so on are using words that embed a whole set of assumption and results, a shared knowledge that defines the economic way of thinking. On the other hand, also common people, who lacks of this mind frame, are exposed to this jargon in their daily life: they often use the same words, but they attach to it a different, non-technical meaning. When exposed to economic concepts, people interiorize them in an intuitive way, relating it to their non-technical knowledge and personal experiences. These adapted versions of economic concepts can be described as *complex representations*: representation that appears clear enough to circulate widely within a population and thus become cultural, but whose contents and implications require expert knowledge, nonetheless, in order to be fully appreciated" (Adamo 2009).

Most types of expert knowledge are complex, in the sense that is difficult, require advanced training and the acquisition of a specific language. Complex representations, in our meaning, do not arise for complex theorems of physics or engineering: they arise when a concept appears to be clear enough to be introduced in the layman way of thinking. Advanced concepts of economics such as dynamic stochastic general equilibrium models or the Black–Scholes models, while debatable among the expert, do not conflict with the laymen comprehension for the simple reason that he has no way to relate it to his knowledge. What instead give rise to complex representations are the most basic elements of economic science, or economics principles. While these are simple concepts – in the sense that they are thought in introductory economics – they are often counter intuitive to the non-expert audience. Cost is a simple example: while people think in terms of monetary costs, economist think in terms of opportunity costs, and this give rise to two different estimates of the entity.

The process of complex representation happens because acquiring and processing information, and especially technical information, is costly. Laymen do not have strong incentives to acquire it unless it yields important or close consequences: when confronted with new concepts , people can either dismiss them as technical jargon, irrelevant to their daily life, or use a simplified version of them, the complex representation that they recreate with their current stock of knowledge and heuristics. Narratives play here a significant role in the creation of these complex representations: unless someone is sitting in an economic class, he recreates the meaning of an economic concept in a story mode, rather than a paradigmatic form of though. While the paradigmatic thought seeks to explain relationships between events and actions with the laws of logic, the narrative mode recreates meaning through the salience of personal, unsequenced and random experiences (Bruner 1986). Of course, meaning created with a narrative mode can be radically different than those obtained with a rigorous paradigmatic process, and this creates a hiatus between the expert use of concepts and the laymen understanding.

The lack of economic understanding is not a problem in the market process, which has its own natural way to rewarding the optimal accumulation of knowledge. Indeed, a complex representation that radically diverges from the scientific construct of a concept becomes a problem when non experts, either voters or policymakers, are called to form and express their preference about economic policies through the political system. Markets minimize the use of heuristic shortcuts, the political process increases them: let's take the example of trade.

An economic actor does not need to know the Ricardo theorem in order to buy a cheap Chinese dress or a technologically advanced Korean Smart phone: the market process conveys enough information for him to make a maximizing decision. Furthermore, when he has to make a decision that yields more important consequences for his own life, such as deciding to go to Poland to have a cheaper dental surgery, he will have all the incentives to acquire information about the quality of the Polish health system up to the optimal point. Conversely, in the political system incentives to acquire information are low, because the cost of erroneous choices is perceived as negligible (Downs, 1957). When a citizen is confronted with the political issue of voting for a party that supports restrictions to free trade, the salience of the narrative of losing jobs is strong: is on the newspapers, maybe someone in its social network lost his job, is emotionally charged by the nationalist discourse. On the other hand, negative consequences which economics highlight – reduced competition and efficiency in the supply system and in general, damages to the citizen as a consumer – are dispersed, not immediately retraceable to his daily life. Vivid narratives, such as those of newspapers reports on "Chinese invasion" and "they are stealing our jobs" fill the lack of expert knowledge on the benefits of free trade. As a result, quoting Gregory Mankiw, "few propositions command as much consensus among professional economists as that open world trade increases economic growth and raises living standards. Smith's insights are now standard fare in Econ 101.Yet, whenever the economy goes through a difficult time, as it has in recent years, free trade comes under fire" (Mankiw 2006).

Non-expert, both voters and decision makers, are expected to have an opinion on principles, rather than complex models – where they are aware they need to rely on the expert knowledge. But it is exactly on principles - technically simple, but still counter intuitive concepts – those complex representations arise. They have a better chance to be used to analyze reality than the original concepts because they appear clear and relevant even to those who are not particularly familiar with them (Adamo 2009). The hiatus between a technical meaning of concept and its representation is thus inversely proportional to the technical complexity of the concept itself.

This hiatus create problems when entering the policy cycle, and scientifically unsound policies results not from economic problems but rather from political economy problems (Nelson 2003). Economists have indeed a commonly agreed answer, but have failed to convince political actors, both active and passive, that their solution is welfare optimizing. This hiatus explains the so called Murphy Law of economics, which is economists have the least influence on policy where they know the most and are most agreed and they have the most influence on policy where they know the least and disagree most vehemently[1]

2 Movies as Weapons of Mass Narrative embedment

People, we discussed, use narrative thought to interpret inputs they receive from the external environment. Normally we use experiences from our personal life and from their social network to elaborate narratives to make sense of the world. But quite often, we have no direct experience of many events, instead we experience them through stories produced by someone else. We are consumers of narratives produced by professional communicators, such as journalists and artists.

In the field of political sociology, the fact that people often learn politically relevant facts as a by-product of nonpolitical routines – such as watching the news or movies - is termed by-product learning (2007): the same principle applies to economic learning. While also economists use narratives in order to persuade and convey information about their specific knowledge (McCloskey 1990), of course communicators have a comparative advantage in doing so. Artists especially can create more vivid and salient stories, with an important impact on people's imagination, and a higher chance to be incorporated in their own complex representation of reality. People resort to arts for entertainment, but also for information and opinions. Unless they have an interest in gathering expert knowledge of the field, people create meaning about economic and social facts from works of arts they enjoy in their leisure time more often than from scientific works which require an high informational effort. Works of art are not truths, but they are often a convincing depiction of it. Furthermore, fiction narratives are easier to understand and memorize: we respond emotionally to the stories we learn, we retain more easily the emotionally charged information that we received, and we carry it on in our understanding of economics and political debate.

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This formulation is attributed to Princeton economist Alan Blinder

A well-known example is public understanding of an important economic phenomena, the industrial revolution: popular authors like Charles Dickens and Benjamin Disraeli masterfully depicted it as an age of poverty and capitalist exploitation of the masses (Williams 1973), while historical economic analysis points out that standards of living of the poor were, indeed, increasing in that period (Ashton 1954). But of course the heartbreaking story of orphans exploited by evil capitalists is much more vivid that the declining children mortality rate.

Popular art produces and spreads in society those narratives that will then become the building blocks of complex representations. The creation of a complex representation is still an individual phenomenon: when facing a new concept, people elaborate it according to their own knowledge, cognitive skills, experiences, tastes. They select the narrative, they elaborate it and apply in a non-uniform way. But the very fact representations are built from stories that can reach a large number of narrative consumer can create social patterns of representation. Since complex representation of economic facts affect the outcomes of political economy problems, understanding what kind of narratives are created and embedded in society through arts becomes an important exercise to understand the lay comprehension of economic concepts. Compared to traditional forms of arts such as paintings or literature, movies are so much more powerful in creating and effectively spreading stories that they can be considered Weapons of Mass Narrative- embedment.

A useful example of how movies impacted on the public policy debate is the relationships between disaster movies and public perception of environmental and risk regulation. Risk regulation involves a combination of simple (as in economics principles) but counterintuitive concepts such as expected cost of harm, opportunity cost and marginal benefits of precautions, and it is one of the fields where expert perceptions of risk mostly diverge from those of laymen, which are influenced by the entity of the damage, its saliency rather than by the risk itself (Slovic 1991). Disaster movies, with their adrenalinic stories, have a much stronger impact on imagination that risk statistics or scientific reports. An American public survey reported statistically significant differences between perceptions of risks, concerns about global warming, and political commitment to the cause between respondents who had seen the popular movie The day after tomorrow (2004) compared to non-watchers, even after controlling for other socio-demographic indicators(Leiserowtiz, 2004).

Ribstenin provides another useful example while explaining how the popularity of the movie Wall Street (1987) negatively influenced public representation of insider trading. The aggressive narrative chosen by Oliver Stone while depicting Gordon Gekko, unscrupulous corporate raider in the 80s impacted on the collective representation of corporate markets. According to the author, that created a strong prejudice against hostile takeovers – which play a fundamental role in the market for corporate control. Also, it resulted in harsh judicial punishment for insider traders as well as political initiatives such as the following *Insider Trading and Securities Fraud Enforcement Act* of 1988, which increased penalties and fines for insider trading and clarified a civil cause of action for outsiders who trade during insider trading (Ribstenin 2006)

Movies are weapons of mass narrative-embedment for a twofold reason: first of all, the combination of textual and visual elements, the interpretations and music provides greater salience to the stories conveyed. Secondly, a movie has a larger potential outreach than a book or a painting. As an example, let's compare the impressive commercial success of Margaret Mitchell's novel, Gone with the Wind, and the even more successful movie adapted from the novel: more than 30 million copies have been sold worldwide (Brown and Wiley 2011). On the other hand, the 1939 historical epic movie has been seen by over 200 million of moviegoers in the US theaters only[2]. And this figure greatly underestimates the number of people who actually watched the movie, because doesn't take into account the worldwide market, or the television and home rental markets, the piracy over the internet and communitarian ways of enjoyment of forms cinema (such as local festivals, cine-forum).

If we then compare with the success of economics books, even with the most popular among them, the comparison is overwhelming: Samuelson's Economics, which has been for decades the most popular textbook of economics sold about 4 millions of copies in its 19 editions ranging from 1948 to 2010. Its contemporary

2 Extimates mine from Mojo All time Domestic grosses, Adjusted for Ticket Price Inflation, http://boxofficemojo.com/alltime/adjusted.htm

stronger competitor, Mankiw's Principles of Economics, has sold about one million of copies from its first publishing in 2008. The bestseller of popular economics, Levitt and Dubner's Freakonomics (2005) sold 4 million copies[3].

Obviously, common people, who are expected to have opinions about economic policies, obviously do not learn economics from economists. But the cultural elites involved in the creation of narratives through movies, might quite often have an introductory level knowledge of economics: probably filmmakers, most certainly movie producers and other media workers. For this reason, in the following section I will analyze how the concept of economic failure – which is a basic principle, not an advanced topic of economics – is communicated by economics professional to non-experts, in the main economics textbooks[4]. Later on I will develop on how cinema cultural élites can be biased in understanding basic economic concepts and thus develop and embed in society narratives that are distant from the original technical concept.

3 Economic failure, 101 (or maybe not)

Failure is a normal fact of economic life: an historical survey, retracing survival rate of the world's 100 largest industrial companies from 1912 to 1995, finding out that only 52 survived as independent entities, only 28 were larger in than in the first period, and only 19 remained in the top 100. 48 companies disappeared, and 29 went bankrupt: and we are talking about the largest, safest industries of the time (Hannah 1999). As reported by The Economist, “the average time a company spends in the S&P 500 index has declined from 75 years in 1937 to about 15 years today. Up to 90% of new businesses fail shortly after being founded. Venture-capital firms are lucky if 20% of their investments pay off. Pharmaceutical companies research hundreds of molecular groups before coming up with a marketable drug” (The Economist 2011).

3 Datas about copies sold retrieved from wikipedia.

4 List of most influential economics textbooks retrieved from the Zuidhof (2012) study of textbooks economics as a specific scientific literature genre.

Economists are aware of the functional importance of failure in the economic system: through a decentralized system of choices, consumers can rule out of the market enterprises that are not efficient enough in providing them satisfactory goods and services. The market invisible hand reallocates resources from declining industries, whose products are not demanded anymore, to products more desired by consumers. But this beneficial function is not intuitive:

> People often failed to realize this inherent feature of capitalism because they did not grasp the meaning and the effects of capital scarcity. The task of the entrepreneur is to select from the multitude of technologically feasible projects those which will satisfy the most urgent of the not yet satisfied needs of the public. Those projects for the execution of which the capital supply does not suffice must not be carried out. The market is always crammed with visionaries who want to float such impracticable and unworkable schemes. It is these dreamers who always complain about the blindness of the capitalists who are too stupid to look after their own interests. Of course, the investors often err in the choice of their investments. But these faults consist precisely in the fact that they preferred an unsuitable project to another that would have satisfied more urgent needs of the buying public (Mises 2008: 19).

The efficiency of failure is indeed a counterintuitive concept: in order to explain it, economists have to "unteach" erroneous prejudices grounded in experiences from the real world. Business failure is a painful phenomenon, and loss of job is one of the most painful events in a personal life. That's the instinctive narrative for people approaching the topic, while the long term efficiency gains as consumers are unseen and perceived as negligible, in comparison.

Surprisingly, in mainstream economics, failure does not exist: the same idea is expressed with the concept of exit from the market of inefficient firms. In most of textbooks, the concept itself is not explained diffusely: they just mention the freedom of exit as a feature of perfect/monopolistic competition or explain the decision of exit in the long term equilibrium (Mankiw 2006: ch. 14; Samuelson 1998: 193, Krugman 2010, ch. 14). Colander (2004) doesn't even explain the concept of exit. Stiglitz provides a few lines:

> "As price falls, there are two market responses. The firms that still find it profitable to produce at the lower price will produce less, and the higher-cost firms will exit the market. In this way, the competitive market ensures that whatever the product, it is produced at the lowest possible price by the most efficient firms" (Stiglitz 2006: 163).

Baumol is even terser, and all that he says is:

> "In a free market, inputs are assigned to the firms that can make the most productive (most profitable) use of them. Firms that cannot make a sufficiently productive use of some input will be priced out of the market for that item" (Baumol, 2006: 294).

Both Stiglitz and Baumol explain the allocative efficiency of freeing resources to more productive uses, none of them explains how the decision about the optimal use of those resources is dispersed in society. In other words, they fail to convey the important role of the consumer in deciding, with their simplest economic choices, about the merit of a use of resources. And while this is a very empowering narrative, it is certainly a counterintuitive one. Also, in all cases exit is described static way: it is either the price or the use of input. Indeed, the assumption behind neoclassical models is indeed that all production functions are equal because the technology is fixed at a given time. They do not communicate the point, effectively conveyed by Mises before, that in real life economy there are indeed alternatives technologies and combination of inputs, and the role of the entrepreneur is to try which one is the best – and once again, the decision about its merits is by the consumers. Austrian economics describe entrepreneurship as a trial an error process, in which failure sanctions wrong entrepreneurial choices and empower consumers (Mises 1922, Kirzner 1973): but Austrian economics, which could provide this more effective narrative, is not thought in introductory economics classes.

Schumpeter underlines how the under appreciation of the role of failure is not an accident, but a characteristics of neoclassical economics as a science of equilibriums, in which "the problem that is usually being visualized is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them" (Schumpeter [1943], 2003: 84).

Basic models of mainstream economics indeed depict static situations of equilibrium and thus fail to take into account innovation and dynamic efficiencies. Those concepts are definitely re-introduced in advanced models, but do not belong to the realm of basic principles. As is well-known, Schumpeter fathered the expression Creative destruction to describe the dynamic process by which capitalism incessantly revolutionizes the economic structures from within, incessantly destroying some, and creating new ones. This revolution come with the cost of failure being a constant in economic life, and this a painful process. But it is the best process for creating innovation and improving standards of living: as commented by Cox and Alm (2008),

> "A society cannot reap the rewards of creative destruction without accepting that some individuals might be worse off, not just in the short term, but perhaps forever. At the same time, attempts to soften the harsher aspects of creative destruction by trying to preserve jobs or protect industries will lead to stagnation and decline, short-circuiting the march of progress. Schumpeter's enduring term reminds us that capitalism's pain and gain are inextricably linked. The process of creating new industries does not go forward without sweeping away the preexisting order".

Attempts to reduce the pain by avoiding business failure are thus an inefficient distortion of the market mechanism: they are basically a subsidy aimed at the less efficient entrepreneurs. But this is another phenomenon that textbook economics fails to explain convincingly. Among the texts analyzed, Frank is the only one that provides the reader with an account of the negative effects of preventing exit from the market when a business is not profitable:

> "No less important than the freedom to enter a market is the freedom to leave. When the airline industry was regulated by the federal government, air carriers were often required to serve specific markets, even though they were losing money in them. When firms discover that a market, once entered, is difficult or impossible to leave, they become reluctant to enter new markets. Barriers to exit thus become barriers to entry. Without reasonably free entry and exit, then, the implications of Adam Smith's invisible hand theory cannot be expected to hold" (Frank 2009: 214).

First of all, he pointing out the negative effects of deterrence on entry instead of explaining why operating at loss is wasteful of resources for the society. By lacking this full explanation and rather resorting to the rhetoric device of the invisible hand, the example fails to provide the reader with material reasons to avoid this intervention beside the one that "the model will not work".

The beneficial function of economic failure in the market system is not rocket science: does not require complex modeling, or mathematic language. All that is required is to understand unseen consequences and to reason in an economic way. I am sure that if asked, any single one of the authors of the textbook I've analyzed would agree with the beneficial function of economic failure in the economic system: still their textbooks do not explain it well enough. Most people do not even learn introductory economics, and they do not think like economists. Unfortunately, even people that are exposed to basic principles of economics might fail to fully appreciate the importance of this concept. Part of the cultural and artistic élites will then miss the opportunity of understand the importance of economic failure.

This is particularly dangerous because in recession times policies such as bailout and subsidies to inefficient industries are more likely to arise if people involved in democratic choices have a lack of understanding of basic economic principles. Once again, this doesn't mean that an artist or the layman must be able to judge the economic soundness of complex theories such as the systemic risk and cascading failure that have been used to justify government bailout of financial institutions. But the hiatus between the original and the complex representation of a simple economic concept – like the one of failure - increase the entity of political economy problems in the policy cycle.

4 Filming the invisible hand

Movies and sound economics, unfortunately, do not always go well together: after underlying the economists' faults in communicating the concept of economic failure, let's turn to filmmakers. Filmmakers too engage in the process of complex representation of economic concepts in light of their own experiences and perceptions. Once again, while this process is individual, there are some features of the movie industry that equally affect filmmakers and thus might generate some regularities. I will here resort to three kinds of explanations: one is the anti-capitalist bias resulting from the industrial organization of the movie business. The second is the lack of understanding or interest for economics, and finally I will address

It is a widespread opinion that artists do not share economist's (general) appreciation for markets and business. According to Pollard (2000), the sentence "Making money is a dirty game. [...] might almost sum up the attitude of English literature towards British business", and the same attitude is shared by other artists. They project themselves in an imaginative world and they strive for self-expression, but they have to please the taste of consumers for living. Artists usually have a high perception of the quality of their work, but that quality is not always rewarded by the market process, which results in resentment toward it.

All artists must face a trade-off between the expression of their own peculiar view of the world and the potential income derived from adapting to consumers preferences (Cowen Tabarrok 2000), but filmmakers have to face much higher restraints. While a writer or a painter, for how much he can appreciate and enjoy collaboration with other artists, can mostly produce his work in autonomy, movies are by necessity collective products. Movies require cooperation with people with different artistic skills (screen players, directors, cinematography directors, actors, sound directors and so on) as well as business skills. Compared to other forms of art, movies require a much more elaborate production structure, more complex organizations and higher capital to be invested. A painter or a writer can produce his work with relatively little capital and without relying on other organizations before the distribution of their work. Directors and screenwriters who elaborate the narratives behind a movie, instead, have to confront themselves continuously with a complex capitalistic organization that will produce their work of art. As such, they do not express directly the artistic perspective of a single author, but rather a version of it bounded by external constraints, such as the requests of producers, who are businessman looking for profit.

Ribstein (2009) explains how industrial organization of movies production creates resentment in filmmakers that cannot freely express their artistic vision, but have to accommodate for the requests and impositions of their producers and co-workers. This resentment is transformed in a peculiarly negative opinion of capitalists that are providing them with the funding necessary to express themselves. Producers, on the other hand, have no particular anti-business bias, being themselves businessmen: but they are willing to indulge on the artist's bias as far as it does not alienate the final consumer. Moviegoers might have some anti-capitalist bias, but most of them have a job, run a business, invest their savings and this imposes another external constraint on the expression of views that are too anti-capitalist. As a result, the narrative delivered cannot be too aggressive against market behaviors. Ribstein defines this situation as an imperfect principal-agent relation: producers invest their capital in filmmakers because they lack of the artistic skills necessary to deliver a movie. The filmmaker is the agent of the producer, but he also has his own agenda of artistic expression, which can include anti-business narratives. The principal can reduce this dysfunctional behavior, but only up to a certain point, where monitoring costs equals the loss of profit due to the production of movies that conflict with the experiences of movie consumers. As a consequence, anti-business narratives will not often be the main theme of the movie, but often a subplot or a reference.

But while this explains why filmmakers can have a negative stance on capitalism doesn't necessarily imply that they cannot they cannot express economic facts correctly. This last option can be interpreted in light of the fact that filmmakers simply don't think economics is an interesting topic. While most of economists find the price mechanism or the organization of human labors in a firm are fascinating phenomena, most people simply don't. Filmmakers are not sensitive to the dry language of economics – and in the previous section we saw that this is partially economists' fault. Kuykendall (2007) quotes Adoplh Berle saying “business does not produce heroes” to support her thesis that the lack of narratives in the corporate law language give rise to indifference or hostility about business in the popular culture. Tabarrok (2010) adds on this layer a subsequent layer: economics is a science of complexity, and even if filmmakers do understand it, still remains “hard to present the profoundly nuanced and intricate latticework of capitalism in two hours”.

A third element beside the anti-business bias and the lack of interest in economics, some features of the movie industry experiences complex representation of failure might be counterproductive. Filmmakers have a large exposure to failure: making movies is indeed a very risky business, with high rewards for very few winners: less than 2% of films account for 80% of box-office returns (The Economist 2011). As a consequence, they most create their own complex representation of the concept of failure in light of their personal experiences or through those of their social networks. In addition, in their field of work prizes and recognition from experts and critics play a vital role in assessing the artistic value of their work: as such, it might come hard for them to appreciate the fact that markets impose on them a decentralized decision process about the merits of an economic activity.

Combining these complex representations with the lack of understanding of economic subtleties and the general resentment about the capitalist system, the following narratives to explain failure can be introduced in movies:

- **Failure as conspiracy**. Good stories need a bad villain: blaming the invisible hand does not provide exactly an exciting plot twist. Complexity of a decentralized decision system is hard to represent, and the fact that ultimately consumers are the ones to be blamed because not choosing the product is not a feasible narrative considering our principal-agent problem and the incentives to control for narratives that grossly alienate the public. Considering this, failure is hard to be represented as a normal and healthy part of economic life.
- **Failure as bad luck**. It's undeniable that luck plays an important role in the success or failure of an enterprise, but that doesn't mean that all failures are caused by bad luck.
- **Failure as an injustice**. In this narrative, the failing business does so because of some unfair treatment by some external actor, which can endanger the life of the business by either competing in an unfair way with them or avoid supporting it in its efforts for escaping. This narrative reflects the frustration that filmmakers experience in their job when they perceive their talent as underappreciated or have to endure economic constraints to their expression.

– **Failure as betrayal or fraud**. Other aspects connected with economic failure, such as downsizing, reducing payments or changing line of production are hardly described as normal acts of entrepreneurial adaptation to the market environment, but rather as a betrayal of shared values by the heartless capitalist. This narrative directly builds on filmmakers anti-business bias,

All of these narratives are present in the movies I will analyze in the next section, but there are also cases where the filmmakers can properly understand economic concepts and build economically sound narratives.

5 Movies and economic failure: a macro analysis

In order to understand how the movie industry represented failure before and after the financial crisis, we relay first on a qualitative analysis of a large database of 240 movies covering two time periods, 2004-2007, before the recession, and 2008-2011. Films selected are fiction ones, not documentaries, for a twofold reason: the exponentially larger audience of the first kind of movies, and the fact that we are interested in narratives, and fiction narratives are a much powerful vehicle of by-product learning.

In order to account for different kind of relevancy to the process of mass narrative-embedment, movies in this macro-analysis are not selected by topic, but according to three criteria of relevancy: their popularity, their impact among critics and cultural élites, and a combination of the two. Accordingly, movies are retrieved from three kinds of sources:

1. **Box office, worldwide[5]:** these movies are big productions, meant to become blockbusters. They represent both what the general consumer wants the most, and what the movie industry expects for them to appreciate. These movies are not particularly innovative in the cinematographic technique, with simple content and typical public-pleaser features such as happy

5 Data are retrieved from the international section, covering 107 territories, of Box Office Mojo, http://www.boxofficemojo.com

endings, visual effects. Frequently they are film about superheroes, disaster movies and romantic comedies.

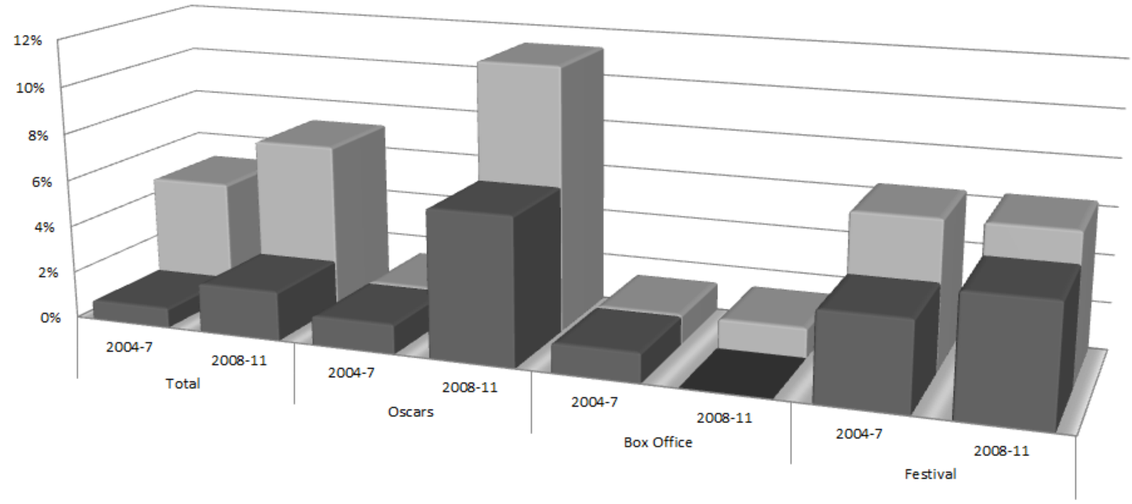
2. **Academy Award, best picture[6] nominees**: the Academy of Motion Pictures and Awards, a professional honorary organization, in theory grants its prestigious Awards of Merits, or Oscars, based only on artistic merit, commercial success and popularity play an important role. As such, they represent mainstream quality films, rich of artistic merit, in line with the expectations of professionals in the business and important for consumers of the product.

3. **Festival awards winners**: in order to select movies that can are relevant as *Avant gard* cinema, I've selected movies that have been awarded with the most important recognitions of historical international festivals – Mostra Internazionale d'Arte Cinematografica di Venezia, Internationale Filmfestspiele Berlin – and from the independent movies circuit Sundance Film Festival. Movies in this set are usually produced on a low budget, aimed at a much more restricted audience, more complex in content and innovative in language and style.

The analysis of this database is qualitative: key points are marked with a code, and extracted from content – which in this case is both text and images – and grouped in similar concepts to make them workable. Specifically, I've coded movies that analyze the theme of failure in the economic (as opposed to personal or artistic) dimension, and themes that touch upon economic themes at all. The concept coded can either be the main theme of the movie, or just a subplot. Shutting up a business is the typical example of the first field, while economic hardships, an entrepreneurial enterprise, collusion etc. are examples of the second

6 Since there is inconsistency in the number of nominees for best pictures, and in order to reach similar number of observation per year, the selection has been integrated with nominees for best original and adapted screenplay, as a recognition of valuable content. When the best screenplay nominations where more than those required for completing the dataset, integration has been decided according to box office results.Source: Academy awards database, http://awardsdatabase.oscars.org/ampas_awards/BasicSearchInput.jsp, and Box Office Mojo http://www.boxofficemojo.com

field. Results are summarized in the following chart, which depicts the number of movies either depicting failure or economic concepts as a percentage of the total number of movies examined, divided by source. The table below reports the number of movies.



	Total		Oscars		Box Office		Festival	
	2004-7	2008-11	2004-7	2008-11	2004-7	2008-11	2004-7	2008-11
Failure	2	5	1	5	1	1	3	4
Economics	12	17	1	9	1	1	5	5

The first observation we can do is that economic themes and business failure as such, are not very popular in the industry: in the overall period, few filmmakers and moviegoers were interested in movies about this topic. Out of 240 movies analyzes, only 29 movies touched economic themes, and only 7 dealt with the issue of economic failure. This is consistent with the Tabarrok suggestion that movies are not the best format for explaining the complexities of economics. The numbers are too small to deliver any significant quantitative analysis: even when most represented, movies about economics and business failure were respectively 7% and 2% of the movies surveyed – in absolute numbers, But we can discern a small trend, and assume that the economic situation increases interest in those theme: people resort to art to understand reality, to consume narratives that they will use to interpreter the world. Movies with economic themes rise from 12 to 17 from the period before to the period after the crisis. Movies about economic failure increased, in the two time periods from 2 to 5.

Also the distribution of these productions is interesting: the most visible trend is in the Oscar set. Essai or independent movies winning the favor of critics are the proxy of what filmmakers want to talk about: in the trade-off between artistic expression and economic success, they have chosen the first. Being low budget or market niche production, involve less restraint from the producers: as such, they can and do represent narratives about business without the control of the principal, and when they discuss economics they do it with a stronger anti-market bias. But they are also less sensitive to the demand: the space they give to economic themes, and to failure, doesn't change in response to the economic environment.

Box offices movie, instead, are even negatively impacted: none of the 120 movies that mostly interested people addressed the issue of failure during the big crisis. This is consisted with the idea that while people might learn about economics fact as a byproduct of watching a movie, which is not the first reason why they buy a ticket. Box Office movies are those who usually play safe, and in which production has a higher control of the content. As such, the main genre is action, fantasy or romantic comedy: not the best outlook for economic themes.

Movies awarded with the Oscar, instead, represent a middle ground between the artist attempts at self-expression and the producer desire to hit a commercial success. In this middle ground we found the larger space for discussing economic themes in general and business failure particularly. These are also the movies with the larger effect of narrative-embedment: they reach far more people than Essai and independent movies, and people that are not just looking for escapist entertainment, but also interesting content.

In this macro-analysis can further inquire on how the economic environment is affecting the tone of the narrative of failure. Movies about economic failure increased, in the two time periods from 2 (Ratatouille and The Aviator), to 5 (Up in the Air, Bridesmaids, The Artist, The Tree of Life, War Horse). In both examples from the first time period, failure is not depicted in gloomy tones, and it is rather a step for a following success.

Pixar's animated movie ***Ratatouille*** (2004) tells the story of a rat gifted with an exceptional talent for cooking, who works behind the scene in a high class restaurant. Quite predictably, this violation of basic health rules, once discovered drives away the customers, and the restaurant fails. But in the subsequent scene main characters are working in a little bistrot named after the rat himself – and with a rat-shaped signboard, letting us assume that customers are there aware of the "peculiarity" of the chef. While external actors (the health inspector and the villain Chef) have a role in exposing the presence of rats in the kitchen, the filmmakers doesn't follow the narrative of failure as an injustice, and accepts the event as a normal fact of economic life, without overdramatizing it.

The Aviator (2004), directed by Martin Scorsese, is a biopic about Howard Hughes (Leonardo Di Caprio), path-breaking entrepreneur in the movie and aviation industry despite its severe obsessive-compulsive disorder. The movie depicts – as well as Hughes romantic life – its pioneering efforts in both industries, and the risks of failure that its Trans World Airlines faces when a prototype of plane crashes and Senator Brewster (Alan Alda) proposes a Commercial Airline Bill, which would give Pan Am the a monopoly on international air travel. There the filmmaker uses the failure as injustice, narrative, but it does it in a sound economic way: Hughes business is at risk of failure not because of economic reason, but rather because of perverse regulation obtained through rent-seeking efforts of the Pan Am chairman Juan Tripp (Alec Baldwin). Still the main character is able to fight it by exposing Senator Brewster's corruption. The other reason why Hughes face risk is because he is designing and producing innovative airplanes: the movie is able to highlight the importance of the fact that failure is a side-effect of innovation, or what business literature defines as "failures at the frontier" (Edmondson 2011).

In the five movies from the years 2008-2011, instead, failure is presented in an overdramatized fashion. In all cases, business failure and the loss of employment are represented as a tragic personal event that brings strong consequences in their life.

Steven Spielberg's ***War Horse*** (2011) is actually a war movie describing the friendship between a boy named Albert Narracott (Jeremy Irvine) and his beautiful racehorse through the World War I. The beginning touches a few economic themes, such as the purchase of the horse for an expense that his too high for the budget of the family of the boy, and endangers their survival. Instead of selling the horse, which is not able to plough and contribute to the family farm, Albert trains him with great efforts and tries cultivating a lower, rock-filled field. Bad weather frustrate his efforts, and the father is forced to sell the horse to the army, devastating Albert and beginning the war adventures of the two. While is evident to the economist watching the movie that the Albert was taking very poor business decision while buy an horse that was too expensive and not an optimal input in his economic activity, the filmmakers prefers to depict as heroic the boy determination to pursue an inefficient activity, whose success was only prevented by bad luck.

Terence Malick's ***The Tree of Life*** (2011) movie is an experimental Essai movie that depicts the story of a family in the 50s as a metaphor for the contrast between nature and grace, represented respectively by the father (Brad Pitt) and the mother (Jessica Chastain). Much of the movie revolves about other issues, but a turning point in the relationships in the family is when the father loses his job, and dramatically start to questions his life-choices.

The Artist (2011) is a French silent movie by Michel Hazanavicius which tells the story of a the love story between George Valentin (Jean Dujardin), disgraced silent film star and Peppy Miller (Bérénice Bejo), rising star of sound cinema. The fall of the great actor, who refuses to keep up with the new fashion, is depicted in a touching way, up to the point when he is about to kill himself. I will talk more extensively on this movie later.

The romantic comedy ***Bridesmaids*** (2011) also shows the impact of business failure in the personal life of Annie Walker (Kristen Wiig) a single woman in her 30s who has been asked by her best friend to be the maid of honor at her wedding. The movies follows her mishaps in relating with the other bridesmaids along the several events preceding the wedding, and her love story with the traffic cop Nathan Rhodes (Chris O'Dowd). Both her friendships and the fresh romance are affected by Annie's trauma of closing her bakery, resulting in her refusal to bake again for someone else and resentment toward other people. With the light tones of a comedy, the movies shows how failure, for how painful, is a normal aspect of business life: at the beginning of the movie, Annie avoid the failure as conspiracy or injustice: she plainly declares: “Well, I'm the genius that opened a bakery during the recession”.

Up in the Air (2009) goes directly at the heart of the big crisis by telling the story of professional corporate "downsizer" Ryan Bingham (George Clooney), who flies around the US to fire people on behalf of "pussies who don't have the balls to sack their own employees". The director Jason Reitman increases the dramatic impact of the movie by adding shortages of interview of real people who recently lost their job, reflecting the pain of the experience. Notwithstanding, this movie is shows a good economic reasoning. Through the instinctively negative figure of the corporate downsizer – who doesn’t know the person that he is going to fire – the movies explain the efficiency of division of labor and outsourcing: firing someone requires specific competences and abilities, which Bingham has and that the employer might not have. Indeed the movies shows extensively how experience and skills are required by showing the initiation to the job of the Well, Natalie Keener (Anna Kendrick). Bingham, in his standard procedure to layoff people display empathy for their situation, but he also exhort them to turn a failure into an opportunity to do something else. To some extent, the movie convey a sound economic representation of the function of failure in a dynamic perspective, which can be summarized in Bingham signature line: “anybody who ever built an empire or changed the world sat where you are right now. And it's because they sat there they were able to do it”.

During the big crisis, the theme of economic failure has been not prominent, but present in cinema. Its representation has occurred more often than in the period before, and more often in mainstream quality movies than in blockbusters or in experimental author movies. The general tone, while describing failure and its consequences, is dramatic and emphasize the negative impact on the main characters. Still this doesn't always prevent filmmakers from creating economically consistent narratives.

6 Movies and economic failure: case studies

In this session I will analyze in more depth three movies produced during the recession, which more extensively deal with the issue of business failure The case studies are The Artist (2011), from the previous session; Wall Street – Money Never Sleeps (2010), a big Hollywood productions; and L'industriale (The entrepreneur, 2011), an Italian medium-size production presented at the Festival del Film di Roma. By presenting these case studies, I will try to analyze how the anti-business bias in the movie industry and a wrong economic representation are two different problems. Indeed, a movie can fail to grasp and communicate economic concepts sound narrative even though it has an overall pro-business approach. Instead, a movies with an anti-business bias, can explain economics correctly. Also, I will highlight how, in line with what described in section 1, unsound representation of economic concepts happen not for technically difficult, but for basic principles.

The Artist is not a movie that frowns on capitalism, which is mostly represented by the good-tempered studio boss Al Zimmer, a positive figure – also thanks to the masterful interpretation of John Goodman. While definitely committed to business success, Zimmer cannot really resist the personal requests of his stars. It is true, he fires the main character, George Valentin, but only after he refuses to do talkies, sound movies. And while doing so, clearly declare the role of consumers in the decision, by stating clearly "the public wants fresh meat and the public is never wrong".

While being a love story, the artist has a great economic narrative. Indeed, it is a perfectly Schumpeterian movie, able to brilliantly render the gale of creative destruction Even the biggest star in the movie industry can be ruled out of the market because of innovation. George Valentin is the reason people go watching movies produced by his studio: but as an entrepreneur, he is quite short sighted. Feeling sure of his charm over consumers, he dismiss the new technology and refuses to adapt to it. Not only, he decides to invest all of his money in a great movie, Tears of Love, shoot without sound. Unsurprisingly, the night of the first show of his movie theaters are empty: also because everybody go watching the new romantic comedy by Peppy Milller, an extra that Valentin helped entering the market and now a star. Bankrupt and forgotten, Valentin risks to die in a fire started in the small rooms where he lives after auctioning his house and all hiss possession. But in a vivid scene, he doesn't blame anyone else but rather admit that it has been his pride and short sightedness that put him in that position.

The story goes on with Peppy taking care of George, and trying to persuade Zimmer to re-hire him, but they only can accomplish this desire when the two artist came up with a new idea: to combine their superb dancing skills in a new kind of movie, the musical. In theory, the concept of innovation is not a basic principle of economics, but it must somehow fascinate moviemakers: this movie (and The Aviator from the previous section) depicts it in a very effective way. After the radical innovation of sound movies, The Artist also shows us an example of incremental innovation, which builds on the sound technology, and combines music and dancing. Incremental innovation is also able to reshuffle the positions in the market – this time giving a happy ending to our characters.

L'imprenditore on the other hand, is an example of a movie with a positive bias toward business, but that still conveys an economically unsound representation of failure. In an almost grey Turin, the movies shows us the economic and personal misfortunes of Nicola Ranieri (Pierfrancesco Favino), owner of a firm that produces photovoltaic panels on the edges of bankruptcy. The masterful direction of Giuliano Montaldo portraits Ranieri as a tenacious hero, willing to do anything possible to save his firm – a feeling particularly strong when he appeal to the workers in a heartfelt speech when he asks them "to fight with me, even though nobody wants our environmental gadgets anymore". Unable to accept the bankruptcy, Ranieri is waiting for new liquidity from German partner, but he doesn't accept the idea of giving up his majority share, and accuses his lawyer (Francesco Scianna) of working against him when he suggests so. He also refuses as a partner his wealthy wife and his mother in law, whose successful winemaking activity he despise. In a very strong scene, he resorts to his bank that, after watching is balances, refuses to give him more credit, and Ranieri leaves outraged, complaining about the fact that banks do everything but help people who do their jobs.

The whole movie is built on the narrative of failure as injustice, but what is really happening here is the market working at his best. A firm that produces something that is not demanded, shall be closed and set productive resources free to be better used. Apparently, Ranieri has developed a new, more efficient solar technology, but he has not enough capital to fund it – the director presents the foregone production as a social waste, but this is not the case. If a small firm has an innovative technology but cannot fund it, the most efficient thing to do is either to find a partner or to sell it to a bigger company. It's Ranieri's management indeed that prevent this to happens, because he wants to retain control of a business he clearly failed to manage properly. By doing so, he endangers the future of his workers, which could keep their jobs if the firm was bought by someone else: what he presents as fight for the firm is actually a fight for his control. The filmmaker – and the spectator with him – empathizes with Ranieri, showing hostility against takeovers quite frequent in movies (Roe 1994). But the economist knows that if an entrepreneur that is unable to manage his assets he shall be replaced.

My final case study instead is a movie that, while having a strong anti-business bias, is able to convey both accurate and inaccurate narratives of economic phenomena. **Wall Street - Money never sleeps (2010)** is the comeback from prison of Gordon Gekko (Michael Douglas) and the story of his fraudulent relationship with his daughter Winnie (Carrey Mulligan) and his future husband Jacke Moore (Shia LaBeouf), broker during the financial crisis. The movie has a strong anti-business attitude which is made clear since the beginning. Winnie and Jacke (to some extent) are the only two positive characters of the movies. She is a journalist who works in a little online newspaper, which proudly wants to keep non profit because she despite profits and business. Jacke is a broker, but he is redeemed by his faith in green energy: while he presents it as a sector interesting for profitable reasons, later in the story is developed that he actually cares about his pet project of cold fusion because he wants to change the world. All the other characters, bankers and investors, are described as greedy, vindicative, prone to fraud and unable to value personal relationships. Wall Street 2 is also Oliver Stone's narrative of the financial crisis, and business failure is an interesting subplot: while the first one is quite a sophisticated economic depiction, the latter is presented with an unsound economic narrative.

Scorsese narrative of the financial crisis starts with the "Greed got greedier" speech at the beginning of the movie. There, Gekko expose evils of the financial economy, but he is also able to point out the role of the government lowering interest rates and allowing banks to leverage their debt with sophisticated financial instruments, as well as irresponsible behaviors by consumers. While aggressive, this is a quite sophisticated – and accurate – economic narrative.

In a subsequent scene, Stone gives his narrative of the bailouts: when the financial crisis escalated, the Federal Reserve Board and the biggest financial institutions have an emergency meeting, hold in a claustrophobic closed room. There's a strong impression that big banks and regulators are conspiring on the back of citizens – confirmed when one board member suggests that the main difficulty will be to sell the agreed solution to the Congress. Stone uses a (maybe too) apocalyptic narrative to describe the consequence of the banking system collapse, a narrative which resounds economic theories of systemic risk and interconnectness. But this story is conveyed by the villains of the story in order to pressure regulators, leaving the spectator doubtful about its validity. Stone also points at the other side of the argument with a dramatic remark by the Fed Secretary, who replies "You're talking nationalization, Bretton. Socialism. I've fought it all my life".

On the other hand, when it comes to a simpler concept of economics this sophistication is lost. While discussing the failure of Keller Zabel Investments, the artistic narratives become less anti-business, but diverge more from economic soundness. The company is highly invested in toxic debt, and the very managing partner, before the collapse, declare that he is unable to understand the world of finance anymore. When the villain Bretton James starts spreading rumors about the financial weakness of KZI, its stock loses more than 30% of its value Zabel tries to arrange a bailout for KZI but his attempts are blocked by James, who suggests that a bailout would create moral hazard (just to forget about it when, in a subsequent moment, he is asking the government to bail its investment bank). Zabel then kills himself, and exit the scene as a heroic figure who failed because of an evil plot. This is a misleading representation of failure, built on the failure as injustice narrative. Zeller is, admittedly, an entrepreneur who is not able to cope with his tasks anymore, and made bad investments. The company is indeed overexposed and it would be beneficial to let it fail. Still, Stone creates empathy between the spectator and Zeller, by imputing the failure to James, who wants to profit from it – Stone's hostility against competition in the market for management was already made clear in the first Wall Street movie.

It is also interesting how the concept of moral hazard, a relatively simple concept of economics, is conveyed: Gekko, at some point, give an inaccurate definition when he explains that "Moral hazard, that's when somebody takes your money and is not responsible for it": that is the premise of moral hazard, i.e. the fact that a party does not incur in all the consequences of his behavior and can defer them to another party who cannot hold him perfectly accountable. Moral hazard is indeed the riskier behavior that follows from this situation, and it is a serious economic problem to consider when discussing business failure. But the credibility of the concept is undermined in Wall Street by the very fact that the concept is introduced is introduced by the hypocritical villain to pursue its vindicative agenda against Zeller. Indeed, Jake refers to it as an excuse for most of the movie, and that is probably the perception that the spectator will bring home.

My point is that when the movie addresses a complex economic event is able to convey, even through a simplified, narrative mode and despite its anti-business bias, the controversy in economic literature. The spectator is not presented with a defense of the systemic risk and too big to fail theory, but rather with a nuanced depiction able to deliver both sides of the scientific debate. On the other hand, when it comes to a simpler concept of economics, such as failure or moral hazard, this sophistication is lost.

Conclusions

In order to understand cinema's influence on the public policy debate it is important to understand the mechanism by which movies can embed collective narratives in society, and how these narratives are elaborated by filmmakers and by the spectator. In my paper I've analyzed how complex representations of economic concepts substitute efforts for acquiring technical knowledge and create a hiatus between experts and non-experts' comprehension of reality. Complex representation arises when the concept is easy enough to be elaborated in an intuitive way, because non-experts do not feel the need to refer to experts.

While analyzing the movies produced after the financial crisis, I've found out that the expected market of the movie has an impact on the ability to discuss economic concepts: mainstream quality productions, meant to please both consumers and the artistic community, is the most fertile ground for narratives about economics. Also, we observed that a bias in favor or against business doesn't necessarily imply or prevent an economically sound narrative.

Being aware of the way people learn about economics as a by-product of entertainment, and of the power as mass narrative-embedment weapons of movies, and what prevents filmmakers from conveying economic consistent narratives is important for economists concerned about how the lack of economic understanding can negatively affect the public debate. Anti-business bias in filmmakers cannot be debunked, because it is a resultant of the industrial organization of their business, elaborated in a narrative mode. But it is probably not that important. What could be more important, and a humble contribution of the economist in this field, is to produce clearer economic explanations in order to unteach complex representations at least in those people who are exposed to introductory economic science. Frank Knight understood the importance of communicating effectively economics when he wrote: “If our social science is to yield fruits in an improved quality of human life, it must for the most part be "sold" to the masses first. The necessity of making its literature not merely accurate and convincing, but as nearly "fool-proof " as possible, is therefore manifest” (Knight 1921:18).

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