

## Introduction

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At first glance, using economics to study video games seems counterintuitive. After all, is not economics all about work, and are not games about play? How much do they really have in common? It is certainly true that when we talk about economics, we are usually speaking about our commercial lives: buying and selling, our jobs, the interest rates on our mortgages, and lots of other things we rarely think of as fun or entertaining. But our economic decisions are about much more than what we do in the marketplace, and economics actually has a lot to say about how and why we play.

Economics is the study of human action and choice, and it applies nearly everywhere in life, including games and entertainment. Whether we are playing the stock market or *The Legend of Zelda*, we are always making economic decisions and living out economic principles, even if we do not realize it. More important for this book, our actions when we play also help to create large, complex economic systems that rival real-world economies. Virtual worlds develop specialization, division of labor, trade, money, entrepreneurship, and even legal institutions that enforce social norms and protect property rights. Thus, virtual economies are often anything but simple simulations, and their economic development gives the lie to the claim that they are little more than diversions from “real” life. In fact, if we look at them from a wider perspective, a picture begins to emerge of an extraordinary *order* that exists in and around games. This order develops from the actions of individual gamers and developers, who together create a vast system of social cooperation that links millions of people around the world and influences even the highest levels of industry.

The purpose of this book is to explore this (often hidden) order. It asks what economics can teach us about video games and reveals the intricate economic logic that underlies so much of what happens in games and the gaming industry. Whether we approach video games as researchers, industry professionals, gamers, or something else entirely, knowledge of economics is valuable and even vital. Thinking of games in an economic way helps explain their social implications and opens up new possibilities for academic research, but it also allows for greater communication between gamers, professionals, and academics. The economic point of view is also highly practical; to give only one example, it is crucial for understanding the relationship between gaming and public policy—a controversial topic for several decades and one in desperate need of attention from serious scholars. We hope that this book will provide a strong foundation for investigating these kinds of problems.

In this task, we have two audiences in mind: economists who want to know more about video games, and people who play, make, and research video games and are curious about their economic side. Yet, appealing to both groups presents a problem: too much detail about games risks alienating the economists, while too much economic talk discourages the gaming community. We have therefore tried to walk a fine line between these extremes by making each chapter accessible to economists, who lack a detailed knowledge of games, as well as noneconomists and nonacademics, who simply have an interest in video games and want to know more about the social science behind them. As explained later, there is an overarching narrative to the book and the chapters are arranged in a logical progression; however, they are also largely self-contained and can be read in any order.

It is also important to say a few things about what this book does and does not hope to achieve. It does explain how gaming provides a unique space in which to study economic behavior. Games, more than any other form of media, demonstrate the power and creative potential of human choice—an idea also at the foundation of economic thinking. Whether they are developing trade relations or the use of money or even complex legal institutions, the worlds of gaming provide a captivating and entertaining arena for studying economic behavior in its most dynamic forms.

In addition to exploring these specific topics, the book is generally intended to show the value of applying economic analysis to the study of video games and the gaming industry and can serve as a handbook for doing such research. Unfortunately, despite providing some fairly obvious benefits, economic research

makes up only a small part of the work being done on video games—even in work purporting to study economic problems. It is understandable, of course, that most game research is undertaken by scholars in communications and media studies, as games are fundamentally linked to these disciplines. It is far less forgivable, however, that so much of gaming research either proceeds with a bold disregard for economic analysis or relies only on economic ideas that have long since been discredited and exiled to disciplines such as critical theory.

Despite the ambitious scope of this collection, however, there are definite limits to the research presented here. Importantly, the purpose of this book is not to explain every important economic idea in gaming. Instead, the chapters are organized around several key areas of overlap between economics and gaming. As the title of the volume indicates, the overarching themes are economic order and disorder in the world of video games. The question of order has been a crucial aspect of economic thinking for centuries and remains one of the most important contributions of economics to human knowledge and well-being. The Scottish philosopher-economist Adam Smith is usually credited with being the first writer to systematically explore the idea of economic order and the role it plays in human moral and social life. His investigations inspired the now-famous metaphor of the “invisible hand”—Smith’s way of describing how, in the marketplace, there exists a harmony between individuals’ interests. His idea was that by participating in the division of labor, we create a system of mutual dependence, in which, in order to improve our own lot in life, we must first improve the lot of others. As we produce, trade, and consume, we adjust our behavior to the needs of different people, and thereby create an order in economic life—and perhaps in our moral and cultural lives as well.

Importantly, Smith recognized that this social order can be unplanned—it can appear *spontaneously*, as the result of human action but not of human design. Many of the orders studied in this book are of this type. To take one simple example, individual gamers in massively multiplayer online games often play with their own interests in mind, yet still contribute to the well-being of other players as well as the workings of in-game economies or social groups. Of course, not all orders are spontaneous and not all spontaneous orders are “good,” either morally or economically. But the idea of an unforeseen, unplanned order is nevertheless valuable for analyzing the kinds of social interactions that occur in and around games.

Shifting from economics to the games themselves, it is also important to note that this book does not study every important game economy or even

every genre of game; the sheer number of titles published in the past forty years or so makes it impossible for us to study more than a small fraction of them. As a result, we have had to be extremely selective in our choice of individual games to discuss. To avoid being too narrow though, we have mainly focused on recognized “classics” that combine commercial success with economic depth. *EVE Online* and the games in the *Diablo* franchise, for instance, have stood the test of time and amassed large fan bases that remain active years or even decades after their initial releases. These kinds of games, we argue, are far richer and more fascinating than the much-maligned “AAA” franchises so common today whose annual installments leave behind no economic or cultural footprint.

The remainder of this introduction outlines the narrative of the book and the content of the individual chapters. The material in Part I (“The Political Economy of Gaming”) sets out many of the key economic concepts and theories that are then applied throughout the rest of the volume. Chapter 1 explains the broad domain of video game economics and how, at the most fundamental level, games and play can be understood using economic ideas. Essentially, video game economics can be divided into three main branches: exploring the economic meaning of video games and play, the study of in-game economies, and the economics of the gaming industry. These three are intertwined and influence each other to a significant extent, and each is also represented in one or more chapters in the book. The majority of Chapter 1, however, discusses the first branch: the economic interpretation of games.

There is now an enormous literature studying games and their role in individual and social life. Unfortunately, the relationship between games and economics is not studied very often in this research, mainly because economics is thought of in narrow terms that makes it irrelevant to the world of play. If economics is restricted to work and commercial activity, as in the famous construct of *homo economicus*, then it would indeed have little to say about the subject. However, economics, properly understood, is a broad and rich social science based on the concepts of action and choice. In fact, economics is, in a sense, simply the teasing out of these ideas under different conditions. And because play involves action and choice, it too can be analyzed using economic reasoning.

In the world of video games, economic ideas play a vital—though often unseen—part in structuring gameplay. Actually, the defining characteristics of games are often economic conditions in disguise: the most obvious example is that games create challenges by introducing artificial scarcity into the world of

gaming, and players respond by economizing in their use of resources. Their choices about how to do this comprise an essential part of games in many genres. Game design similarly evokes problems of choice, trade-offs, opportunity costs, specialization, trade, and entrepreneurship. In fact, some genres depend entirely on these concepts to create compelling play experiences. As a result, simply by playing games and being familiar with their conventions, gamers are already becoming used to the economic way of thinking, even if they do not realize it. Nevertheless, it remains an open question just how similar virtual worlds are to the real world and whether economics translates exactly into digital space. Chapter 1 therefore concludes with a discussion of the similarities and differences between the two, especially with regard to the role of governance and economic policy.

Whereas Chapter 1 studies individual action and its immediate effects, Chapter 2 expands on the themes of social interaction and social order. In particular, it explains the key concept of spontaneous order, also known as “emergent” order. The chapter argues that early video games had mostly spontaneous narratives due to hardware and software limitations, which were then gradually replaced with more structured, on-rails narratives of increasing complexity. Throughout the first two decades of the twenty-first century though, there was a resurgence of interest in the spontaneous generation of narratives, which many argue provide a kind of richness in the game experience not found in linear narratives. Spontaneous games create stories that, as Adam Ferguson said of emergent order in general, are the “result of human action, but not the execution of any human design.” In fact, the video game medium is particularly well suited to this kind of interactive and open-ended storytelling, giving it a unique place among artistic media.

Part II of the book, “Economic Order and Chaos in Virtual Worlds,” begins a series of discussions of economic order and chaos in specific games. Chapter 3 opens by examining how in-game economies develop legal systems to deal with conflict and create institutional stability. In many real-world cases of self-governance, individuals are able to rely on the threat of simple ostracism to induce cooperation. Yet in the relatively populous and anonymous world of online virtual societies, this mechanism is often ineffective. Indeed, even some exceptional solutions that have emerged to induce cooperation in cases where ostracism has proven impossible—solutions such as religion, superstition, or the threat of violence—prove difficult to employ successfully in online societies characterized by cultural diversity, modernity, and real-world anonymity. This chapter studies how gamers overcome this challenge by making use of the voluntarily adopted

legal system called “Dragon Kill Points,” which successfully establishes property rights, allocates scarce economic goods, and allows for long-run contractual exchange in an environment utterly different from those examined in most of the law and economics literature.

While Chapter 3 surveys how in-game economies develop complex institutions to encourage social cooperation, Chapter 4 takes things a step further by looking at ways in which virtual worlds such as those of massively multiplayer online role-playing games (MMORPGs) can provide insight into the nature and dynamics of social, economic, and political processes. One very popular MMORPG that shows great promise in this regard is *EVE Online*. Much of the scholarly interest in this game has been inspired by the light it sheds on international relations. Yet it is also a fascinating virtual laboratory for the study of the interplay between economic and political orders. The chapter examines the following features of this virtual world as it has developed since it was first launched: the importance of economic factors as the basis for power within the virtual world of New Eden; the emergence of political orders or coalitions, and the bases for these; the part played by both natural affinity and charismatic leadership in the emergence of these coalitions; the acceleration of innovation in a number of areas as the game and its virtual world have developed and the part played by one key innovation in particular; and the insights to be gained from studying the turbulent and fast-changing economy and politics of New Eden.

Chapter 5 turns to the study of money. Special attention is placed on the way that money, a general medium of exchange, emerges spontaneously in response to the difficulties of direct barter exchange. The chapter closely studies the game mechanics of *Diablo II* and the development of its player community, showing how the technical conditions of the game not only created conditions similar to a barter economy but also facilitated the emergence of a series of currency units that were unplanned by developers. After evaluating the significance of various game mechanics that influenced production and exchange in *Diablo II*'s game environment, the chapter then considers the available evidence regarding the monetary system that prevailed in the game's online community and how it evolved over time. It concludes by contrasting the relative success of emergent institutions like money in *Diablo II* with the eventual abandonment of monetary institutions in *Diablo III*.

After studying the emergence of money in *Diablo II* in Chapter 5, Chapter 6 brings the discussion full circle by explaining the hyperinflation and collapse of the monetary unit in *Diablo III*. Released in May 2012, Blizzard Entertainment's

*Diablo III* included the introduction of a real money auction house as a central feature of its virtual economy. Yet by allowing players to monetize in-game items, incentives were fostered that encouraged automated play via “bots” and ultimately set in motion a series of events that led to an outbreak of virtual hyperinflation. This chapter applies an Austrian-school theoretical framework to analyze message board comments and publicly available prices that trace the episode from its early stages in the summer of 2012 to the apex of the currency crisis in May 2013. A list of other, lesser-known online currency crises are discussed as well, along with policy recommendations designed to avoid similar incidents in the future.

Part III of the book, “The Political Economy of the Video Game Industry,” shifts the focus to the broader business of gaming. Importantly, these final chapters are not a comprehensive account of the global gaming business; instead, their purpose is to look at several key ways in which the economic orders discussed earlier in the book influence the structure and performance of the video game industry and vice versa. With this in mind, Chapter 7 examines business strategies for massively multiplayer online (MMO) game developers. Rather than simply ask how in-game economies work, this study looks at how video game companies manipulate their internal capabilities and their external industrial environment to increase their competitive performance. At the end of the day, a video game company is usually a for-profit firm like any other, looking to increase its financial performance through an effective business strategy. Yet one area scholars have not closely explored involves the best competitive strategies for platform-based firms that face competitive pressures from user-generated content. Sometimes user-generated content increases revenues by increasing overall platform usage, but at other times it can decrease revenues by cannibalizing core product offerings. This chapter thus bridges the gap between discussions of internal game mechanics and the external gaming industry. Specifically, it uses transaction costs theory and research on the informal economy to analyze MMO firm strategy. Three MMO mini case studies, on *Rage of Bahamut*, *Minecraft*, and *Dota 2*, help to explain how MMOs face a “facilitate or acquire” decision when managing user-generated content.

Chapter 8 continues this theme by exploring the entrepreneurial elements inherent in the world of video game “modding” and the interactions between the modding community and game developers. Over the last few years, the practice of creating and distributing user mods has become more popular and prevalent, and this chapter attempts to quantify the sheer scale of the phenomenon while also providing a narrative describing the entrepreneurial impact that mods have had

on the industry. In particular, mods allow for the addition of new game mechanics and a wide range of other content that developers are unable or unwilling to include in their products. These user-generated programs even inspire fresh ideas among professional developers. Furthermore, mods come directly from consumers and, therefore, represent a truly emergent and competitive novelty as compared to the more centralized downloadable content offered by developers. Modding represents a unique form of crowdsourced learning that overcomes the weaknesses identified in the literature studying “absorptive capacity” and leads to increased firm performance from innovation, particularly for those firms residing in highly dynamic or entrepreneurial industries. This chapter studies three variations of the modding phenomenon—traditional modding, quasi-modding, and multiuser dungeons (MUDs)—to better understand how the process takes place. These insights can inspire firms (both inside and outside the gaming industry) to consider potentially novel mechanisms that will enhance their learning and overall innovative performance.

Building on the same framework used in Chapter 8, Chapter 9 shifts the focus of study to a specific company: Valve Corporation, one of the leading competitors in the video game industry. Beginning as a fairly traditional game developer, Valve has gone from strength to strength, quickly evolving from its original role as a developer to a publisher and content platform. Its financial success makes it notable in its own right, but it is also fascinating from an economic and organizational perspective. Valve is a “flat” organization with no hierarchy or centralized decision-making structure. Instead of top-down management, decision-making is “democratized,” and employees choose the projects they pursue and the collaborative groups in which they work. The company’s success thus raises many questions about the costs, benefits, and basic feasibility of nontraditional organizations. This chapter provides some possible answers, including about the interactions between informal management and decision-making, the delegation of authority, firm capabilities, and labor markets. It explains that companies like Valve are best thought of as networks of derived decision-making in which the entrepreneur—owners of the firm delegate authority to employees and sidestep traditional management. Although Valve has enjoyed great success, its unique form of organization also carries costs, costs that are sometimes great enough to prevent the company from pursuing valuable projects. The discussion concludes with a case study of the *Half-Life* franchise and suggests that Valve’s organizational design was likely responsible for its failure to take the series forward for many years.



Although most of the chapters in this book focus on specific video games and economic problems, we hope readers will soon see that the ideas and theories we discuss apply across titles and genres. The reason is that economics studies universal aspects of human action and choice; as a result, its lessons are valid in many different contexts. To give one perhaps cheeky example, economics shows how hardcore MMO players, veteran speed runners, or old-school gamers modding or emulating forgotten titles from long-defunct consoles often have more in common than they realize with players of the most casual mobile games. This might be an uncomfortable thought for serious gamers, but that is the (sometimes surprising) beauty of economic order: despite our differences, our interests are still profoundly intertwined and, what is more, we are all the better for it. It is our hope that readers of this book will apply this lesson to their own experiences as gamers, developers, researchers, policymakers, or any other “class” we choose in the game of life.

# The Economic Meaning of Play

## Ludology and Praxeology in Video Game Worlds

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### INTRODUCTION

A common misconception about economics is that it only applies to the business world. For many people, economics is simply irrelevant to other areas of life because it treats people like selfish, robotic decision-makers. In this view, while the assumptions and models of economics might work for studying profit-hungry business executives, they simply will not do for studying humans' complicated social and cultural lives. Economics cannot, for example, explain altruism and charity because economists assume that people are always rational, greedy, and motivated by money. Yet, in reality, claim the critics, human beings are none of these things—checkmate, economists.

Fortunately, this view of economics is quite mistaken. Economics, in fact, offers realistic insights into action and choice in many settings, be they boardrooms or game rooms. The latter are the topic of this chapter, which explores the economic meaning of gameplay. In keeping with the subject of this book, the discussion mainly concerns play in the context of video games but the ideas also apply to other kinds of play or gaming activity that are usually believed to fall outside the scope of economics. As I will show, economics provides a useful framework for thinking about play and its human meaning. I argue two main points: first, economics offers a unique way to analyze play and (video) games, and second, games provoke fascinating questions about economic behavior while also providing unique opportunities to answer them.

The chapter is structured as follows: the second section outlines the scope of video game economics and several different types of research included under