The Man Who Discovered Capitalism: A Documentary on Schumpeter for Use in the Classroom*

John T. Dalton†
Wake Forest University

Andrew J. Logan‡
Wake Forest University

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Abstract

We describe how the 2016 documentary *The Man Who Discovered Capitalism* can be used in the classroom to provide an entry point to the life and economics of Joseph A. Schumpeter, whose work on innovation, entrepreneurship, and creative destruction remains relevant for students today. We summarize the key ideas conveyed in the documentary and offer four criticisms: its failure to capture the role of fin-de-siècle Vienna on Schumpeter's intellectual development, its incomplete understanding of Schumpeter's theory of innovation, its overstatement of Keynes's influence relative to Schumpeter, and the overly generous credit it gives to government for spurring innovation. We show how the documentary can be used in the classroom, complete with sample discussion questions grounded in the criticisms we identify. We argue *The Man Who Discovered Capitalism* is an effective teaching tool suitable for a variety of courses, including those on economic growth, intermediate macroeconomics, and the history of economic thought, among others.

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†Contact: Department of Economics, Kirby Hall, Wake Forest University, Box 7505, Winston-Salem, NC 27109. Email: daltonjt@wfu.edu

‡Contact: Department of Economics, Kirby Hall, Wake Forest University, Box 7505, Winston-Salem, NC 27109. Email: aloganmail@gmail.com

1 Introduction

The use of film and video clips in the classroom has long been used to illustrate key economic concepts, aiding learning retention, motivating interest in the material, and increasing the efficiency of learning (Mateer and Stephenson 2011). Documentaries in particular offer students concrete examples of how economics exists in and is relevant for the world around them. This paper describes how the 2016 documentary *The Man Who Discovered Capitalism* can be used to teach the life and economics of Joseph A. Schumpeter with a heavy focus on his theories of innovation, entrepreneurship, and creative destruction. Our paper fills a niche for teaching these concepts in economics classrooms, which evidence from Diamond (2007), Gwartney (2012), and Phipps, Strom, and Baumol (2012) indicates remains undertaught. Given the importance economists attach to innovation, entrepreneurship, and creative destruction, our paper helps fulfill a need by providing instructors with an engaging example for teaching these ideas.

Broadly, *The Man Who Discovered Capitalism* tells the story of Schumpeter's life; the development of his theories of innovation, entrepreneurship, and creative destruction; and how the digital revolution illustrates those theories. The documentary argues that Schumpeter's most famous idea, the concept of creative destruction, is manifested in Silicon Valley where innovation is accompanied by the decline of businesses that are made obsolete. The documentary unpacks creative destruction through interviews with economists and entrepreneurs alike, ranging from Schumpeter student and Nobel laureate Robert Solow to former Treasury Secretary Larry Summers to successful entrepreneurs from Soundcloud, Tesla, Apple and others. Throughout, the documentary charts Schumpeter's intellectual development, connecting his colorful biography with his economic thinking. Early scenes frame Schumpeter as an intellectual maverick, complete with a sword duel with a librarian to secure his students' access to books. The documentary charts the development of his ideas as primarily expressed in *The Theory of Economic Development*, which challenged the orthodox understanding of the economy as a static circular flow. The documentary discusses Schumpeter's move to America and his rivalry with John Maynard Keynes, whose success with *The General Theory of Employment, Interest, and Money* stood in sharp contrast to Schumpeter's own *Business Cycles*. It concludes by claiming that the digital era has seen both the vindication of Schumpeter's theory and the merging of his ideas with those of Keynes through the "entrepreneurial state."

Our paper first summarizes the documentary in detail before launching into four main criticisms, organized by their chronological appearance in the documentary. First, we take issue with omissions in Schumpeter's biography, particularly his formative years in the city of Vienna around the collapse of the Hapsburg empire—a dynamic time in Schumpeter's own life which McCraw (2007) argues heavily influenced his dynamic view of the economy. Second, we provide additional context for the documentary's description of Schumpeter's theory of innovation and entrepreneurship, providing a definition for innovation that is both faithful to Schumpeter's *The Theory of Economic Development* and offers students an opportunity to reflect on when they too have (even inadvertently) been entrepreneurs. Third, we contest the documentary's framing of the debate between Keynes and Schumpeter and show how it overstates Keynes's relative importance. Fourth, we contest the idea of the entrepreneurial state as the sole driver of innovation, offering a more balanced viewpoint that takes bottom-up innovation into account. We conclude by showing how to use the documentary in the classroom, describing a range of courses in which the documentary can be taught, including those with a focus on innovation and entrepreneurship, such as courses on economic growth and Austrian economics; intermediate macroeconomics; the history of economic thought; and Schumpeter specifically.[1] Furthermore, we provide sample discussion questions grounded in the four main criticisms of the documentary we identify. We use minute marks throughout the paper to easily identify scenes for classroom use.

This paper contributes to a substantial pedagogical literature on film and video clips in economics. Leet and Houser (2003) offers a variety of documentary and classic film clips to cover a range of topics in economics. Sexton (2006) does the same for more contemporary films. Other papers focus on specific areas of economics including the functioning of free markets (Formaini 2001), creative destruction (Diamond 2009b), public choice (Mateer and Stephenson 2011),

[1]For instructors interested in using *The Man Who Discovered Capitalism* in the classroom, it is easily accessible. The producer of the documentary, Philipp filmproduction, maintains a website at `https://www.schumpeter-film.de/en/`, which includes a trailer, general information about the film, and purchasing details. The documentary can be streamed online for a small fee (`https://vimeo.com/ondemand/schumpeter`) or purchased as a DVD. In our experience, however, the best way to view the documentary is through a campus library streaming service, such as Kanopy or Films on Demand by Infobase. If these services are available, instructors can easily show the documentary in the classroom, and students have the added benefit of being able to rewatch the film on their own time through their normal library access.

game theory (Burke, Robak, and Stumph 2018), and Schumpeter's theory of innovation and entrepreneurship (Dalton and Logan 2020a). Hall (2005) and Ghent, Grant, and Lesica (2011) discuss how to use the popular TV shows *The Simpsons* and *Seinfeld* in teaching economics, whereas Holian (2011) analyzes a range of documentary videos produced by comedian Drew Carey to highlight their suitability for teaching core economic concepts. Lastly, based on a survey of economic educators, Mateer, O'Roark, and Holder (2016) describes twenty of the best films for teaching economics, of which two documentaries are included.

As this survey of the literature demonstrates, economists seeking to use film and video in the classroom have a large variety of clips to choose from. What distinguishes our paper from the many that have come before it is the fact that our subject matter, *The Man Who Discovered Capitalism*, is a documentary about the life and ideas of an *actual* economist! Diamond (2009b) concludes with the prediction that we might one day see Schumpeter on the big screen, arguing he is one of the few economists whose life contained enough dramatic flare to warrant depiction in a movie. *The Man Who Discovered Capitalism* is the closest realization to the prediction in Diamond (2009b) that we know of, and, as we argue throughout this paper, the documentary can be used to great effect for teaching Schumpeter and his ideas in the classroom.

2 Documentary Summary

Over the course of little under an hour, the documentary describes Schumpeter's tumultuous personal life, his ambitions, and the ability of his theories of innovation, entrepreneurship, and creative destruction to accurately describe the digital revolution. Presuming that Schumpeter is relatively unknown to the viewer, the documentary begins with a summary of his key ideas. Labeling him as "a right wing version of Karl Marx" (5:50), the film argues that Marx and Schumpeter were among the earliest economists to pay attention to innovation as the key fact of capitalism. It was Schumpeter who realized that the formally defined perfect competition in the classical economic models prevalent at the time could not explain economic growth. Instead, Schumpeter would argue that innovation drives economic growth in a process he would term "creative destruction," as new technological developments take the economy up to higher levels of productivity. How did Schumpeter realize those insights? The documentary answers that question chronologically, beginning with a summary of Schumpeter's early personal life. Schumpeter was born in Triesch, a small town in the then Austro-Hungarian empire, where his father died at an early age. Schumpeter's mother remarried for status and money and moved the family to Vienna, where Schumpeter studied economics. His early masterpiece was *The Theory of Economic Development* (7:55), where Schumpeter recognized the economy was not static but rather alive and pulsating, constantly churning with new innovations. His work focused on the entrepreneur, the special person who shepherds such innovations to market, and the documentary does too, interviewing figures like the Tesla cofounder Martin Eberhard to illustrate the three qualities Schumpeter argues entrepreneurs possess: (1) the will to conquer, (2) the joy of creating, and (3) the desire to build a dynasty. In a particularly memorable scene (10:20), Simon Woodroffe, the founder of the company YO! Sushi, vividly describes the importance of the will to conquer for entrepreneurs seeking to remake the world around them.[2]

Unfortunately, as the documentary notes, Schumpeter was not as successful at putting his observations in practice outside of academia. He served as finance minister after the First World War ruined the finances of the Austrian government. With a nearly impossible job and unable to reckon with the political savvy of the other cabinet ministers, Schumpeter was sacked after just seven months. His saving grace was a golden parachute which landed him the presidency of the private Biedermann Bank. There, he made speculative investments in new technology companies—funding the very entrepreneurial class his early theory identified. As Schumpeter said, however, "the entrepreneur loses other people's money" (14:56), and the entrepreneurs he bankrolled did just that. With his investments burning cash and his personal lifestyle marked by lavish spending on alcohol and prostitutes, Schumpeter was fired from the Biedermann Bank and left with $2 million in today's money in personal debts. He put his personal life in order by falling in love with a much younger woman named Annie, but, at the tragic age of 23, Annie died in childbirth along with their infant son. His mother had died shortly before Annie and Schumpeter's son passed away. Sunk in despair, Schumpeter threw himself into his academic work, later taking a position at Harvard.

[2]Woodroffe states, "Why would you want to go and start a business, become an entrepreneur, with all those sleepless nights, with all those worries, with all the chances and probabilities that it would go wrong? Why would you want to do that? Unless there was some little piece of grit in your oyster, something that made you feel angry or annoyed or driven or something that you wanted to prove. So I'd say that every entrepreneur at some level wants to prove something to themselves, to another person, to their parents, whatever it is."

Keynes published *A Treatise on Money* around the same time Schumpeter was working on his own treatise in monetary economics. It is here that the documentary sets up a rivalry of sorts between Keynes and Schumpeter (24:05). It was a difficult setback for Schumpeter to give up working on his monetary treatise. Schumpeter continued to burn with ambition, though, and later released his 1939 work *Business Cycles*. Schumpeter again suffered from bad timing and felt dejected at the inability of his *Business Cycles* to receive the same attention as Keynes's *The General Theory*, which had been published in 1936 (34:00). The documentary interviews Larry Summers, who notes that Schumpeter did not inspire as many acolytes as Keynes in part because Schumpeter's theories did not lend themselves well to mathematical modeling (47:29). Schumpeter also disagreed strongly with Keynes's prognosis of the Great Depression. Criticizing Keynes's short term economic thinking, Schumpeter believed that state intervention in the economy would put it in an "oxygen tent" (28:05) and prevent recessions from purging the economy of unproductively allocated capital.

The documentary puts Schumpeter's thesis on recessions to the test by leaping forward in time to the DotCom bubble, the 2008 financial crisis, and the internet revolution. In what became his magnum opus, *Capitalism, Socialism and Democracy* expands upon the ideas of *The Theory of Economic Development* and popularized the term creative destruction to describe the incessant churning of the economic system, where new innovations are created that destroy antiquated products and companies in their wake. As the documentary puts it, the digital revolution is a story of creative destruction (41:00), as big, well-established companies struggle to keep pace with the innovations of smaller, more nimble competitors. Beholden to shareholders and bureaucratic routine, big companies divorce themselves from success by preventing themselves from failing. The documentary gives the example of Kodak, whose business was destroyed by the digital camera despite the fact that Kodak invented the digital camera (43:50)! Much of the power of entrepreneurs lies in their ability to spot the value of new innovations and make them marketable and commercially useful. Such was Steve Job's ability, who saw the digital mouse and graphical user interface demonstrated by Xerox and promptly integrated them in the popular Macintosh computer (18:40). While Schumpeter celebrated the "creative" half of creative destruction as one of capitalism's key benefits, he did not ignore the "destruction" half of the phrase, which describes the loss of companies and jobs made obsolete by innovation—a problem many governments today reckon with as the ongoing battle between Uber and taxi cabs demonstrates (44:55).

It is said that Schumpeter sought to be the greatest economist in the world, the greatest horseman in Austria, and the greatest lover in Vienna—and had succeeded at only two of the three, having failed in becoming a good horseman (7:12). The documentary makes the case that he may well have been one of the great economists, as he was elected president of the American Economic Association in 1948 and four of his students at Harvard went on to win Nobel prizes. However, all four were Keynesians, so the film suggests that Schumpeter's most enduring contribution has been the inspiration he gave for economists to combine the work of Keynes and Schumpeter by emphasizing the role government plays in supporting innovation. Giving the example of the iPhone, many of whose components (such as the touchscreen and GPS) were the fruits of basic government research and development funding, the documentary claims that public investments are responsible for many of the technological advancements of the digital era. The documentary closes by arguing that the digital revolution illustrates both the importance of innovation for economic growth but also the role the state plays in making such innovation possible. As such, it calls on government to take an active role in using public investments to help spur innovation.

3 Documentary Commentary

This section casts a critical eye on some of the main themes of the documentary, including Schumpeter's biography, types of Schumpeterian innovation, Schumpeter versus Keynes, and government as the driver of innovation. We have selected these themes in accordance with their ability to generate class discussion. Schumpeter's biography, for example, provides students with a case for how an economist's upbringing and current surroundings can shape their ideas, something that students can then reflect on and discuss with respect to their own economics ideas and beliefs. Providing additional details and context for Schumpeter's theory of innovation allows instructors to give a more faithful rendition of Schumpeter's ideas, one that both expands students' economics toolkit and provides students an opportunity to think about and discuss how they themselves innovate and act as entrepreneurs. Lastly, Schumpeter versus Keynes and the role of government in fostering innovation both introduce students to different approaches to economic policy, broadly speaking less versus more intervention, and the optimal role of government in the specific case of innovation.

3.1 Schumpeter's Biography

The documentary excels at capturing the energy and dynamism of Schumpeter's personality, be it through an opening sword duel (0:00) or the vivid recollection of his colorful introduction to a Cambridge neighbor (25:38). However, it leaves a key gap in failing to identify Schumpeter's educational influences, particularly the formative impact of the city of Vienna on his personal and intellectual development. While we recognize that the documentary disregards such details for the sake of narrative flow and time constraints, we believe they are sufficiently impactful to merit instructor attention in the classroom.

Vienna was Schumpeter's laboratory where he not only learned economics but saw creative destruction in action. At the time he lived there, the city was the capital of the Hapsburg Empire and one of the great intellectual centers of Europe. Furthermore, Vienna was experiencing a period of rapid industrialization. The seismic changes industrialization wrought on Schumpeter's home would usher in a "techno-romantic" Vienna (McCraw 2007, p. 34). The phrase "techno-romatic" captures the struggle between a newly emerging capitalist class and the imperial and aristocratic society industrialization challenged. Many of the transformations occurring during techno-romantic Vienna are enshrined in the architectural and artistic landscape of the city today. From the public works projects under the direction of Otto Wagner to the innovations in art and interior design by Gustav Klimt and Joseph Hoffmann, visiting Vienna today provides context for understanding the environment in which Schumpeter grew up and began his early career (Dalton and Logan 2021). As we have argued elsewhere (Dalton and Logan 2020b), this period of social and economic transformation in Vienna's history helps explain Schumpeter's focus on understanding economic dynamics, with a special emphasis on innovation and creative destruction. Dekker (2016) shows what was happening in Vienna not only influenced Schumpeter but the wider circle of "Viennese students of civilization," the term Dekker (2016) uses for all the intellectuals in Vienna grappling with the changes around them. Schumpeter would benefit from his close proximity to this group of intellectuals, first as a student and then as an equal participant in the intellectual life of Vienna.

Schumpeter's education positioned him well to grasp the significance of the changes Vienna was undergoing. As a child, he first attended the Theresianum, a rigorous preparatory school that molded young imperial civil servants and leaders. There, Schumpeter developed a rigorous classical background that would inform the breadth of his writings on innovation and entrepreneurship. After graduating from the Theresianum, he next enrolled at the University of Vienna, at the time one of the best places to study economics in the world. The University of Vienna was home to the economists Carl Menger, Friedrich von Wieser, and Eugen von Böhm-Bawerk, the founders of what would later become known as the Austrian school of economics.[3] Under the tutelage of mentors like Eugen von Böhm-Bawerk, Schumpeter was exposed to competing theories of capitalism. For example, Schumpeter attended Böhm-Bawerk's famous seminar on Karl Marx, which led to debates over capitalism versus socialism with other seminar attendees such as Otto Bauer, Rudolf Hilferding, Emil Lederer, and Ludwig von Mises (McCraw 2007, p. 45). Most of these figures from Schumpeter's early years of education are classified by Dekker (2016, p. 33) as Viennese students of civilization and were members of various Vienese "Kreise," the informal intellectual circles which existed alongside the formal university. Schumpeter himself was, thus, connected to the networks which drove intellectual life in the city. The jostling of ideas within this larger intellectual community along with the color and chaos of a great imperial city lumbering into the modern era would inspire Schumpeter's own theories of capitalism.

The tumult of techno-romantic Vienna also frames Schumpeter's backstory in a compelling way that creates value for students independently of the novelty of his ideas. Schumpeter lived out his theory of creative destruction through a chaotic life outside the norms of many academics. Professionally, Schumpeter had been a politician and businessman in between academic stints. Personally, Schumpeter had struggled through great loss, seeing his home country devastated by two world wars, losing his father at a young age and his wife, mother, and infant son all in close succession, and making a small fortune only to subsequently lose it. Through his many ups and downs, Schumpeter maintained a sense of energy and decorum with a flair for the

[3] Wasserman (2019) is the most recent full-length history of the Austrian school of economics, including the founding period at the University of Vienna during which Schumpeter was studying economics and beginning his career. As a result, Schumpeter features prominently in this part of the book.

dramatic—the documentary opens with the true story of Schumpeter challenging the librarian of the University of Czernowitz to a sword duel over students' right to check out library books (0:00). His personal writings are dotted with witty aphorisms reflecting a wide ranging classical education and a brilliant mind. As Dalton and Logan (2021) argues, Schumpeter's nontraditional background, personal story, and sense of humor can be a source of inspiration for students that keep them interested and engaged with his writings and economics writ large. The documentary does an excellent job at conveying all of these points.

3.2 Types of Schumpeterian Innovation

While the documentary correctly identifies that innovation lies at the heart of Schumpeter's theory, viewers may well walk away from the film with the impression that the only innovations which matter for economic growth are improved consumer products.[4] The film interviews an admirably wide and interesting group of entrepreneurs, but all are focused on commercial consumer products (particularly those of a digital bent). This is understandable—new consumer products are what immediately leap to the mind when most people think of innovation—but in *The Theory of Economic Development* Schumpeter is much broader in his definition of what innovations are, with key consequences for understanding its relationship with economic development. Schumpeter (1934, p. 65) defines innovation as "...the carrying out of new combinations," of which there are five: (1) the introduction of a new good or quality of good, (2) the introduction of a new method of production, (3) the opening of a new market, (4) the discovery of a new source of supply, and (5) the carrying out of a new organization of an industry. The documentary focuses on (1), which does not capture the full breadth of what Schumpeter is claiming.

Schumpeter's definitions of innovation are interrelated, which can be explained by Schumpeter's criticisms of the circular flow model. The inspiration for his insights on innovation and

[4] It is worth pointing out that in critiquing how the documentary presents Schumpeter's theory of innovation we are not also critiquing how the documentary presents Schumpeter's theory of the psychology of the entrepreneur. The reason is straightforward. As we discussed in our summary in Section 2, the documentary does a great job of emphasizing the role of the entrepreneur in bringing innovations to market and the special characteristics entrepreneurs need to possess in order to go against the status quo of society (7:50-11:30). Instructors less familiar with Schumpeter's theory of the entrepreneur may wish to consult chapter 2 of *The Theory of Economic Development* (Schumpeter 1934), which absorbed some of the ideas first presented in chapter 7 of the original German edition of the book, later dropped by Schumpeter in subsequent editions (Schumpeter 2002, van Meerhaeghe 2003).

new combinations arose from his observations in *The Theory of Economic Development* that rapid economic growth of the kind observed in the early 20th century could not be explained by the circular flow model, which focused on the slow and steady accumulation of capital as the means to achieve growth. Instead, Schumpeter realized that growth is the result of interlinked innovations both large and small that may not even necessarily be related to technological change, as typically conceived.

Definition (2) of a new innovation, for example, suggests that innovation can be as simple as adjustments by workers on an assembly line. Students can find a humorous and relatable example of this in the "St. Patrick's Day" episode of the hit TV show *The Office*, where Darryl Philbin, the warehouse foreman, presents a new layout for the office warehouse to Dunder Mifflin leadership to improve shipping for paper and printers—earning himself a promotion and embarrassing Michael Scott in the process. In this case, Darryl is carrying out a new combination which makes him an entrepreneur, but, once the new combination has been "brought to market" by being implemented in the warehouse and has become routine, Darryl is no longer an entrepreneur.[5]

In this sense, Schumpeter's definition of innovation and entrepreneurship is both wider and narrower than is explained in the documentary. It is wider in the sense that many kinds of innovations meet Schumpeter's definition, but narrower in the sense that individuals do not remain as entrepreneurs for long. The documentary fails to grasp that second point in particular; at 31:35 it argues that good entrepreneurs must delegate and immediately after interviews an entrepreneur talking about the challenges of delegation when leading his now established tech company. By Schumpeter's definition, this person is no longer an entrepreneur but a manager—a subtle distinction that will help students to better understand Schumpeter's theory and how the entrepreneur is conceived as a distinct type of economic agent in his work.

Some innovations certainly have more of an impact than others, but the very existence

[5] Or, consider the story of Richard Montañez, a real-life example of how people in positions like the fictional Darryl Philbin can be entrepreneurs. Working as a janitor for his employer Frito-Lay, Montañez noticed the company was missing out on the opportunity to sell products to the burgeoning market catering to Latino consumers. Montañez combined a batch of unseasoned Cheetos with his own homemade seasoning inspired by Mexican street corn dishes and then pitched the idea to Frito-Lay's CEO, who had recently called on all employees to help revitalize the struggling company by putting forth ideas of their own. Montañez's creation, Flamin' Hot Cheetos, would go on to contribute to the resurgence of Frito-Lay. Montañez (2021) describes this story in fuller detail.

of even small changes punctures the idea of the static circular flow. While the documentary rightly focuses on captains of industry in accordance with Schumpeter's own writings, Schumpeter's broad definition of new combinations brings innovation down from the heights of Google, Facebook, and the iPhone and into the ordinary lives of students. Each of us can be innovators—whether by developing a new note-taking technique for economics classes or innovating on the production line like Darryl Philbin at Dunder Mifflin. Highlighting this for students is critical. As Dalton and Logan (2022) and Dalton and Logan (2020a) argue, if Schumpeter's ideas are more relatable, there is a better chance that students are able to connect with the point of Schumpeter's writings. Innovation is no longer a far-away process to be carried out only by successful interviewees in a documentary. Instead, it is real, relatable, and accessible—anyone can be an entrepreneur.

Schumpeter's theory of innovation continued to evolve over the course of his career, splitting off into two types of innovation which the literature today refers to as Schumpeter Mark I and Mark II, a differentiation the documentary does not make.[6] Mark I innovation is most closely identified with *The Theory of Economic Development* and describes innovations brought about by new entrepreneurs unestablished in the economic scene. Like Bill Gates or Steve Jobs working in their garage, Mark I innovators have little economic heft and are not working through established firms and/or research labs. In contrast, Mark II innovation is more closely identified with Schumpeter's later work in *Capitalism, Socialism and Democracy* and refers to innovations created by existing status quo players. Worth noting is that the documentary, particularly the interviews, focuses heavily on Mark I innovations. However, Mark II innovation is not ignored entirely; the discussion of the iPhone late in the documentary would be a good example of Mark II innovation, as the iPhone and its constituent technologies were mostly developed by status quo players. While this omission does not detract significantly from the documentary, instructors may wish to highlight the differences between Mark I and II theories of innovation and ask students to discuss the relationship between competition and innovation; specifically, the tradeoffs between large firms stifling new and innovative entrants into a market (Mark I innovation) and their ability to bring enormous resources to bear to create new innovations

[6]The terminology distinguishing Schumpeter Mark I and Mark II was first introduced by Nelson and Winter (1982) and Kamien and Scwhartz (1982).

(Mark II innovation).[7] Of course, there is a vast reservoir of knowledge in the literature on innovation, including on the distinction between Mark I and II, which instructors can draw upon to help facilitate classroom discussion. Malerba and Orsenigo (1996) provides a useful introduction showing how the patterns of Mark I and Mark II innovations vary across different types of technology.

3.3 Schumpeter vs. Keynes

The documentary posits that it was Keynes who stood in the way of Schumpeter claiming the title of the "world's greatest economist," developing a subplot about the rivalry between Schumpeter and Keynes that runs throughout the documentary.[8] The documentary uses the rivalry between Schumpeter and Keynes to great effect, posing to viewers fundamental questions in economics and the social sciences more broadly, such as the optimal role of government in society. In the end, however, the documentary argues Keynes was more influential than Schumpeter and that Schumpeter's vision of a world of innovation and creative destruction requires a Keynesian foundation in the form of government supported innovation. In Section 3.4 below, we challenge the idea that government supported innovation is necessary and desirable. Here, we argue the documentary overstates Keynes's influence relative to Schumpeter. This is an important point to address with students, because the documentary gives the false impression that Keynes's view of the world is "correct," which is clearly not the consensus amongst economists.

Certainly Keynes and Schumpeter, along with Marx, held significant sway over the direction of economics in the early twentieth century, with all three presenting contrasting views on the benefits and prospects for capitalism. Schumpeter himself carefully studied Marx, arguing in *Capitalism, Socialism and Democracy* that while Marx was correct in foreseeing capitalism's demise, Marx was wrong that capitalism impoverished the masses in the long run. Of the three, Keynes is widely viewed as the "doctor" whose cure of government intervention to stimulate aggregate demand saved capitalism from its own collapse. As the documentary notes (30:30), Schumpeter took issue with Keynes's policy prescriptions, however, arguing that state interven-

[7] This tension figures heavily into *Capitalism, Socialism and Democracy* and could fit well into a broader course on Schumpeter.

[8] Of course, Keynes would need to be bested for anyone securing such a title during the twentieth century. Wapshott (2011), for example, presents the case that Friedrich Hayek was Keynes's best known rival.

tion would only slow innovation by preventing downturns in the business cycle. Without such downturns, the economy would be robbed of the opportunity to reallocate capital and labor towards more productive uses, and credit would continue to flow into unproductive investments and not towards those which are more likely to generate growth-creating innovation.

Given the magnitude and duration of the Great Depression, Schumpeter's views quickly fell out of favor amongst many economists and policy-makers while Keynes's prescriptions won the day. Even if Schumpeter's views were deemed inappropriate for the context of the Great Depression, it does not mean the benefits from recessions in the form of the reallocation of resources suddenly go away. Although these reallocation benefits are well-known to economists, they are rarely articulated by policy-makers nowadays and are not at the forefront of public discussion and government response when recessions occur. Schumpeter's theory of business cycles helps students recognize the silver lining during recessions and better understand the costs associated with preventing business cycles from running their natural course.

Academic economists and policy-makers alike would likely have given the title of world's greatest economist to Keynes, not Schumpeter, throughout much of the twentieth century. The difference in part might be attributed to the ease with which Keynes's work lent itself to mathematical methods, even if Keynes himself mostly relied on prose, and the increased use of mathematical methods in the economics profession during the second half of the twentieth century. The language of mathematics offered Keynes's acolytes the opportunity to neatly define the relationships he established between the money supply, aggregate demand, the loanable funds market, and a host of other Keynesian advancements. As such, Keynes's work created a research agenda with substantial breadth and depth for other economists to follow, the so-called neoclassical synthesis of Hicks, Hansen, Modigliani, and Samuelson being a prime example. In contrast, Schumpeter's work, which was much broader in its scope, offered few opportunities for mathematization. *Capitalism, Socialism and Democracy*, for example, was a fusion of economics, sociology, psychology, history, law, and political science that reflected Schumpeter's expansive classical education, but was difficult to model. Larry Summers elegantly makes this argument at 47:29 in the documentary.[9]

[9] In full, Summers says, "Keynes provided a framework in which large armies of people could do fairly straightforward statistical work, which then harked back to Keynes. Schumpeter's was more a vision than a research program. In some ways, a vision is as important or may even be more important than a research program, but it

Keynes's relative success was also a product of timing around the Great Depression. Schumpeter's *Business Cycles*, a work he had dedicated many years of careful research to, was already considered out of date by the time of its publication in 1939 during the Great Depression. Its account of the business cycle as cresting waves of innovation seemed irrelevant at best given the magnitude of the crisis, and Keynes's activist prescription was a timely and attractive call that simply overshadowed Schumpeter's work. The actors in the documentary do a beautiful job of depicting what it must have been like for Schumpeter to present his work on business cycles at the time (34:00). By the 1990s, however, the Digital Revolution had taken root, and as the documentary illustrates, Schumpeter's ideas, particularly creative destruction, were in vogue.

Viewers of the documentary might be surprised to learn of the citation analysis comparing Keynes and Schumpeter in Diamond (2009a), which is replicated and extended in Dalton and Gaeto (2019). Although these papers show citations to Keynes outstripped those to Schumpeter for much of the twentieth century, this citation pattern changes beginning in the 1990s, as citations to Schumpeter surpass those to Keynes, lending support to what Giersch (1984) predicted would be "The Age of Schumpeter." Indeed, in 2017, the latest year available in the data in Dalton and Gaeto (2019), Schumpeter receives more than twice the citations than Keynes, the trend for which points upward. While Schumpeter's influence, as measured, however imperfectly, by citations, steadily increases, Keynes's influence, also measured by citations, stagnates during the two decades leading up to the Great Recession. The decline in Keynes's influence coincides with the emergence of alternative paradigms in macroeconomics in response to the stagflation of the 1970s. Although the Great Recession brought renewed interest in Keynes's ideas, Schumpeter continues to receive more citations than Keynes. The documentary misses this collapse in Keynes's influence and, thus, overstates Keynes's influence relative to Schumpeter. Moreover, it is not the case that "for decades, Schumpeter was almost forgotten" (0:53), as citations to Schumpeter have steadily increased over time. Of course, the documentary needs to stress the importance of Keynes, or the Keynesian view of the world with its accompanying

employees fewer people as acolytes." Peter Drucker shared a similar sentiment as Larry Summers. Writing in an article published in 1983 in *Forbes* magazine which brought the rivalry between Keynes and Schumpeter to the attention of the wider public, Drucker (1983) concludes "No one in the interwar years was more brilliant, more clever than Keynes. Schumpeter, by contrast, appeared pedestrian—but he had wisdom. Cleverness carries the day. But wisdom endureth." Solow (2007) sides with Summers and Drucker, stating, "Today, some sixty years after their deaths, Schumpeter's star probably outshines Keynes's."

interventionist policies, in order to better argue innovation requires government support. We now turn to critiquing this claim.

3.4 Government Funded Innovation

The documentary uses the economic growth produced by the digital revolution as proof that Schumpeter's theory was vindicated. However, it gives the government a substantial amount of credit for the successes of the firms and technologies that ushered it in. The documentary claims that cutting-edge research around Schumpeter today works on blending his ideas with those of Keynes to push the government beyond reactive demand management to market failures and into the realm of creation, of using public investments to spur new technologies. Noting that "Without government investment in scientific research, many of today's technologies and businesses wouldn't exist" (49:45), the documentary calls for increased state engagement with research and development funding to spur innovation and, thus, economic growth. The documentary interviews Mariana Mazzucato, a leading advocate of state industrial policy and the "entrepreneurial state" (Mazzucato 2013).

The documentary leaves viewers with the impression that government-led innovation describes both the history of recent innovation and the optimal policy for generating innovation going forward in time. We think not presenting a more balanced view of what drives innovation is one of the biggest mistakes in the entire documentary, an unfortunate narrative choice given how well the filmmakers explain complex economic ideas throughout the rest of the documentary. Students in particular would be much better served by a more balanced and accurate representation of whether economists and historians of innovation cast the state and industrial policy as a leader of innovation. Students, for example, may be interested to know one of the world's most prominent economic historians of the Industrial Revolution, Deirdre McCloskey, disagrees with the views of Mariana Mazzucato vehemently, going so far as to co-author a book length rebuttal of Mazzucato's entrepreneurial state (McCloskey and Mingardi 2020). Indeed, McCloskey's trilogy on the Great Enrichment and the bourgeois virtues painstakingly documents the Industrial Revolution, and innovation more broadly, as a bottom up process, not the top down phenomenon suggested in the conclusion of the documentary (McCloskey 2006, McCloskey 2010, McCloskey 2016). Even the role of intellectual property, such as patents and copyright, which is commonly argued to be necessary for innovation, is not without its critics. Boldrin and Levine (2008) prefers the term "intellectual monopoly" to intellectual property, as it more properly signals the costs associated with government grants of private monopoly over ideas. Boldrin and Levine (2008) provides both theoretical and empirical evidence showing intellectual monopoly is both not necessary and in fact can be harmful for innovation. Instructors showing the documentary can use these references and the many examples they contain as a way of presenting a more balanced view of government's role in fostering innovation.

Of course, the silver lining in what we have called one of the biggest mistakes in the documentary is that it can be used to great effect in launching a classroom discussion about Schumpeter's theories of innovation, entrepreneurship, and creative destruction and what, if any, role the government should play in developing these forces.

4 Employing the Documentary in the Classroom

In this section, we provide further details on how to use *The Man Who Discovered Capitalism* in the classroom. We begin by describing the actual experience of teaching *The Man Who Discovered Capitalism* during an advanced undergraduate seminar on Joseph Schumpeter but then close with suggestions for using the documentary in different types of courses.

The seminar on Joseph Schumpeter primarily covers his theories of innovation and entrepreneurship, creative destruction, and the debate over capitalism and socialism (see Dalton and Logan (2022) for further details on the course). As we have argued, *The Man Who Discovered Capitalism* provides an excellent introduction and overview to Schumpeter the man and economist, his ideas, and the continuing relevance of those ideas for the world today. As such, the documentary is an appropriate starting point for the course and is used as the first in-class content. Beyond the obvious usefulness of summarizing Schumpeter's key economic ideas for students, the documentary also helps to immediately set the tone of the course and get students interested in the subject matter. From Schumpeter's compelling personality and biography to the enthusiasm for his ideas on the faces of the interviewees to the concrete examples from the digital economy illustrating Schumpeter's theories of innovation, entrepreneurship, and creative destruction, students intuitively understand "This Is Something I Need to Know."

Students watch *The Man Who Discovered Capitalism* in full together in class and then discuss the documentary.[10] To help facilitate discussion, students are given the following list of questions and prompts on a handout to answer while watching the documentary:

1. Who was Joseph Schumpeter? Take note of any particular biographical details which you think influenced the development of his ideas and the history of economics.

2. Describe Schumpeter's theory of innovation. What is meant by the term "creative destruction?"

3. What factors help explain Keynes's greater popularity relative to Schumpeter for much of the twentieth century?

4. Identify the key differences between Keynes and Schumpeter in their view of business cycles. What would each say the government's role should be during economic downturns?

5. In your view, what role should the government play in funding innovation? Give specific examples of where government intervention has both hurt and helped innovation in your response.

These questions are listed roughly in terms of their relevance chronologically throughout the documentary. These questions cover the main themes and answering them provides students with a good overview of the documentary.[11] These questions also coincide with how we discuss

[10] Some students, such as non-native English speakers, may struggle with watching the documentary in class and require special arrangements. There are a few options available for instructors in this situation. First, the options for viewing the film we mentioned in footnote 1 can be made available to these students before class, especially if students have access to the film through their regular library access. These students can then come to class having already watched the film. Second, depending on how the film is being shown, closed captioning may be available and might be useful for some students. We know that with Films on Demand by Infobase, a library streaming service we have used, this is the case. Third, instructors may want to make a transcript of the film available to students needing special arrangements. Again, Films on Demand by Infobase has this functionality, but other formats may not. If a transcript is not available, then we would be happy to provide one. Simply contact us via the corresponding author details on this paper.

[11] Although the five questions listed on the handout cover the documentary's main themes and provide ample opportunity for classroom discussion, instructors will, of course, be interested in adding or subtracting to these questions for specific classes or on the fly during live discussions in response to student comments. For example, in order to highlight the role played by the banking sector in Schumpeter's theories, instructors might ask "What role does credit play in the creative destruction process? Absent credit, would creative destruction still occur?" Or, on the potential costs to innovation and creative destruction, "What downsides, if any, does Schumpeter identify to innovation? Does he believe the government has a role to play in alleviating them?" Lastly, on the

the documentary throughout this paper. Question 1 coincides with our discussion in Section 3.1, question 2 with Section 3.2, questions 3 and 4 with Section 3.3, and question 5 with Section 3.4. Question 5 invites students to think critically about the content of the documentary and is, thus, more opened-ended than the other questions. Instructors may want to point this out to their students, as it is more difficult to write out a response to this question while watching the documentary. This question is designed to move the classroom discussion beyond the documentary and set the stage for a recurring theme throughout the course, namely the optimal role of government in society, posed in its most extreme version as capitalism versus socialism.

Whereas the questions on the handout are designed to focus students' attention while watching the documentary and make sure students absorb the main themes, instructors will also want students to challenge these ideas to create a richer and more inclusive perspective. In general, our experience suggests more reflective questions are better left posed during discussion or as follow-up assignments, such as writing a video report. Otherwise, these more open-ended types of questions can distract the viewer from following along with what is happening in the film. In terms of in-class discussion, instructors may want to begin by noting the role played by Schumpeter's formative years in Vienna on why he came to emphasize innovation and creative destruction, as we described in Section 3.1. Students can then be asked to reflect on how their own backgrounds have influenced how they think about innovation and creative destruction; the role these forces play in society, both good and bad; and how, if at all, societies should try to manage innovation and creative destruction. These prompts allow students to draw on their own experiences, both from the real world and other classes, to comment on the ideas put forth in the film, generating the gains from trade for other students inherent in discussion-based pedagogy. Students not brought up in the U.S., for example, may have trouble relating to the examples of the digital revolution presented in the documentary, almost all of which are U.S. based. How does innovation and creative destruction look outside of Silicon Valley? Or, how has innovation and creative destruction emerging from Silicon Valley affected different countries around the world? As discussed in Section 3.2, Schumpeter's definition of an entrepreneur as

distinction between invention and innovation in Schumpeter's theory, "What is the difference between invention and innovation? Consider the example of Steve Jobs and Xerox discussed in the documentary." There are many other such possibilities for students to discuss.

one who carries out new combinations is also wider and narrower than explained in the documentary. Is this a good definition of an entrepreneur? Students may challenge this definition noting it certainly is not consistent with how most people would define an entrepreneur, which is loosely something along the lines of "someone who starts or runs a business." What is gained and lost by Schumpeter's definition? Instructors can point out to students that other economists, such as Frank Knight and Israel Kirzner, have different ideas about entrepreneurs. By posing these types of more reflective questions, either in discussion or assignments, instructors can help students more critically engage with the documentary.

In our experience, the response from students about the documentary assignment is overwhelmingly positive. The documentary achieves the classroom goals of summarizing Schumpeter's main contributions to economics, showing how these contributions remain relevant today, and generating discussion. The documentary also helps to support other pedagogical activities and assessments. The first exam in the Schumpeter seminar centers around innovation and entrepreneurship. Since these are main themes of the documentary, viewing and discussing the documentary supports learning and mastering the details of Schumpeter's theories and how to apply them to real world case studies. The questions from the handout can be adapted to the exam. We have also asked the following question on an exam to be answered as a short essay: "Describe how the digital revolution portrayed in the documentary *The Man Who Discovered Capitalism* illustrates Schumpeter's theories of innovation, entrepreneurship, and creative destruction." Later in the semester, students are divided into small groups of 2-4 people depending on class size and asked to prepare a lecture on a case study of creative destruction. The choice of the case is up to the students, which results in a wide variety of group lectures. Examples in the past have included such topics as the changing formats for how music is delivered, from vinyl records to streaming; the evolution of the lighting industry; how the introduction of missile technology disrupted the air defense industry; and creative destruction in the car industry, among many others. The students are not allowed to choose the digital revolution covered in the documentary, but the documentary does serve as a useful example for how to think about how innovation, entrepreneurs, and creative destruction are interrelated in the context of a real world case study. Applying the approach of the documentary helps students to design their own lecture. Students could also be asked to write a video report on the documentary as an assignment outside of class. This long format for reflection challenges students to engage with the material critically.

Although the classroom experience we have described here was designed for a course dedicated to Schumpeter, we think viewing *The Man Who Discovered Capitalism* would easily fit into other courses in economics. In particular, the documentary and our handout could easily be integrated into any upper level course with an emphasis on innovation and entrepreneurship, such as an economic growth or Austrian economics course. For these types of courses, there would be little to no changes required from the assignment as we have described it.

We think the documentary would also be appropriate for use in an intermediate macroeconomics course. The documentary would likely work best for those intermediate macroeconomics courses in which long-run economic growth is taught in the second half of the semester.[12] The reason for this is that significant portions of the documentary use the Great Depression, the emergence of Keynesian macroeconomic policy as a response, and, in general, the rivalry between Schumpeter and Keynes as context for exploring Schumpeter's ideas. Students are much better served when watching the documentary if they already have some background knowledge of short-run macroeconomic policy in the tradition of Keynes. Instructors can then leverage this background knowledge to juxtapose short-run versus long-run phenomena, with Schumpeter's theories of innovation, entrepreneurship, and creative destruction as key drivers of economic growth being an exemplary example for why an economist might emphasize the importance of the long-run over the short-run. Indeed, viewing and discussing *The Man Who Discovered Capitalism* could serve as a transition between the short-run and long-run portions of an intermediate macroeconomics course. As with upper level courses on innovation and entrepreneurship, the assignment we outlined above can be used in an intermediate macroeconomics course with little to no changes.

Lastly, the documentary is well suited for use in courses on the history of economic thought. Indeed, evaluating the documentary in the context of the broader history of economic thought is a key theme running throughout our description and critiques. For example, in Section 3.3, we write about how the documentary suggests Keynes's work lent itself better to mathematical

[12]Courses on intermediate macroeconomics are often conceptualized as being divided into sections on short-run and long-run phenomena. Instructors and textbooks vary in how they sequence the short-run and long-run material.

methods compared to Schumpeter's and how this helps explain Keynes's influence relative to Schumpeter's within the economics profession, especially during a time in which economists came to rely on mathematical methods more completely. The documentary can, thus, be used to help students understand how the trajectory towards mathematical methods has affected the relative stature of economists over time within the field of economics.[13] This is true not only in the case of Schumpeter versus Keynes but potentially so for many economists writing before the advent of mathematical methods to the exclusion of nearly all else. Students could then be asked, for example, to reflect on how this movement towards mathematical methods may have impacted economic policies, in so far as the rising and falling fortunes of different economists affect the intellectual supports for various policies. In terms of implementing the handout assignment in a history of thought class, questions 1 through 4 can be used directly from the handout, whereas question 5 can be reserved as a segue for evaluating how different economists, or schools of thought, have approached the question of government's role in fostering innovation.

In addition to the broader themes related to the history of economic thought discussed throughout this paper (the influence of Vienna and the early Austrian school on Schumpeter, getting the details right about Schumpeter's theory of innovation and entrepreneurship, and the comparison between Schumpeter and Keynes), instructors might also be interested in emphasizing additional scenes related to the history of economic thought. There are many such scenes to choose from. The publications of *The Theory of Economic Development*, *Business Cycles*, and *Capitalism, Socialism and Democracy* are discussed at 7:55, 34:00, and 40:50. Schumpeter's teaching legacy in the form of four former students (Paul Samuelson, James Tobin, Robert Solow, Thomas Schelling) going on to win the Nobel Prize is discussed at 47:16.[14] Larry Sum-

[13]And, outside the field of economics we would conjecture. Dalton and Gaeto (2019) show, for example, that the reason citations to Schumpeter are so much higher than those to Keynes is that Schumpeter is cited so much more frequently *outside* of economics. One implication of this result is that economists are likely to underestimate Schumpeter's influence relative to Keynes's.

[14]The documentary tries to diminish Schumpeter's influence on these students by pointing out they tended to be Keynesians. Instructors can provide students with a more balanced assessment. For example, the importance Schumpeter and Solow attach to economic growth in their research is clear, even though it is simultaneously true that Solow's residual sucks the life out of Schumpeter's theory of innovation and entrepreneurship. Similarly, Schumpeter's early support for the use of mathematics in economics is important context for understanding Samuelson's dissertation and his subsequent mathematization of the field. We would argue Solow's growth model and Samuelson's mathematization of economics are far more important parts of their legacies than their Keynesianism.

mers introduces the idea of Schumpeter's vision as an important part of his legacy (47:29), an argument we have also made with respect to *Capitalism, Socialism and Democracy* (Dalton and Logan 2020b). The personal anecdotes given by the interviewees bring Schumpeter to life, which helps stimulate students' interest in Schumpeter. Solow's remarks about Schumpeter's personality (25:20 and 26:12) are worth noting, in part because Solow is such a familiar economist to students who have studied intermediate macroeconomics. Finally, the label attached to Schumpeter noted in Section 2 bears repeating: "a right wing version of Karl Marx" (5:50). What does the interviewee mean by this statement? What evidence for or against this claim can you find? Instructors can use these and other questions to create a meaningful dialogue in the classroom, one that connects Schumpeter to another important thinker in the history of economic thought.[15] Given the prominent role played by Keynes in the documentary, a natural segue in the conversation comparing Schumpeter and Marx is to ask students how Keynes fits into this dichotomy.[16]

In all the variety of courses in which the documentary might be used, we recognize that instructors may either not have enough class time to show the full documentary in class or not want to show the full documentary in order to prioritize other pedagogical goals. In these cases, the documentary can still be of use for instructors teaching on related topics. The documentary and accompanying questions can be assigned to students for viewing outside of normal class hours. Or, instructors may choose to show shorter segments of the documentary to illustrate a

[15]Students may be interested in following up this discussion by reading Part I of *Capitalism, Socialism and Democracy* in which Schumpeter analyzes Marx as a prophet, sociologist, economist, and teacher.

[16]Indeed, the three thinkers have often been memorably compared. The odd coincidence of the year 1883, the year of Marx's death and Keynes and Schumpeter's births, is often interpreted as a passing of the intellectual torch, the superstitious amongst us not believing in coincidences. In his introduction to the paperback edition of Schumpeter's *The Theory of Economic Development*, Elliott (1983, p. XXXII) provides the following way of comparing Marx, Keynes, and Schumpeter, which bears reproducing in full for its usefulness for class discussion:

> In simplified terms, we may characterize the relations among Marx, Keynes, and Schumpeter as follows: Marx (1) identified some major properties of capitalist behavior (for example, depressions, inequality in income distribution), (2) designated these properties as flaws or contradictions of the system, and (3) predicted the death of capitalism significantly because of its economic contradictions. Keynes also (1) identified leading properties of capitalism (notably its proclivity toward unemployment because of the absence of a viable self-regulatory mechanism), and (2) designated them as failures of the system, but (3) proposed (limited) reforms of the system to eradicate or control them. Schumpeter agreed with both Marx and Keynes on (1), disagreed with both on (2), and agreed with Marx on (3), partly because of undesirable side effects of liberal-labor reforms of the Keynesian variety.

point in lecture or to setup a discussion. For example, the documentary contains short segments on the relationship between innovation and economic growth (3:45-6:40), Schumpeter's theory of entrepreneurship (7:50-11:30), and creative destruction and the digital revolution as an example thereof (40:45-45:50). Appendix A.1 contains a complete breakdown of the documentary by segment, including each segment's minute marks, and can be used by instructors for maximum flexibility in how they choose to integrate the documentary into their courses.

5 Conclusion

Schumpeter's theories of innovation, entrepreneurship, and creative destruction remain highly relevant for students of economics, not only for illuminating key concepts like economic growth but also for making sense of the frenetic pace of change during periods of heightened innovation, such as that unfolding during the COVID-19 pandemic. Unfortunately, innovation, entrepreneurship, and creative destruction remain undertaught (Diamond 2007, Gwartney 2012, Phipps, Strom, and Baumol 2012). This is likely due to some of the same forces suggested in the documentary *The Man Who Discovered Capitalism* when describing why Keynes's contributions to economics were so much more readily adopted than Schumpeter's, i.e. Keynes's ideas lent themselves to mathematical modeling, the preferred method of teaching economics.

We have argued the documentary *The Man Who Discovered Capitalism* is a useful teaching tool for introducing students to Schumpeter's life and contributions to economics. The compelling biographical details, clarity with which the ideas are presented and supported with real-life examples, and high production quality bring Schumpeter and his ideas to life for students in a way that is impossible to achieve through purely chalk-and-talk methods. Our description and extended critiques of the documentary provide instructors with material for teaching the documentary in the classroom. The critiques can be viewed as a way to generate classroom discussion about topics presented in the documentary. For those instructors looking for additional material for teaching Schumpeter's ideas, Dalton and Logan (2022) provides the details for teaching a semester length class on Schumpeter, while Dalton and Logan (2020a) describes how the movie *Joy* can be used to teach the theory of innovation and entrepreneurship described by Schumpeter in *The Theory of Economic Development*.

A Appendix

A.1 Film Segments by Theme in *The Man Who Discovered Capitalism*

This appendix divides the documentary into film segments by theme and should be useful for providing instructors with more flexibility in how they incorporate the documentary into their classes. The documentary weaves details from Schumpeter's life throughout the film as a way to break up and transition between different themes. Since these scenes tend to be short and often focus purely on biographical details, we simply label them as "Schumpeter Biography." The segments are as follows:

1. Introduction 0:00-2:00
2. Schumpeter Biography 2:00-3:45
3. Relationship between Innovation and Economic Growth 3:45-6:40
4. Schumpeter Biography 6:40-7:50
5. *The Theory of Economic Development* and Schumpeter's Theory of Entrepreneurship 7:50-11:30
6. Schumpeter Biography 11:30-14:15
7. Relationship between Banks, Credit, Innovation, and Entrepreneurs 14:15-16:40
8. Steve Jobs and Apple as an Example of Schumpeter's Theories 16:40-20:20
9. Schumpeter Biography 20:20-24:05
10. Introducing Rivalry between Schumpeter and Keynes 24:05-25:00
11. Schumpeter Biography 25:00-26:45
12. Comparing and Contrasting Keynes's and Schumpeter's Theories of Business Cycles 26:45-31:20

13. Schumpeter Biography 31:20-34:00
14. Schumpeter's *Business Cycles* Published and Keynes Rivalry 34:00-35:50
15. Digital Revolution as an Example of Schumpeter's Theories 35:50-40:45
16. Creative Destruction, *Capitalism, Socialism and Democracy*, and the Digital Revolution as an Example 40:45-45:50
17. Role of Government and Keynes Rivalry 45:50-47:53
18. Schumpeter Inspiring Economists and the Role of Government in Fostering Innovation 47:53-50:28
19. Conclusion 50:28-52:00

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