Ilmenau University of Technology

Institute of Economics

_____

th·

What Drives Binge-Watching?
An Economic Theory and Analysis of Impact Factors

Sophia Gaenssle & Philipp Kunz-Kaltenhaeuser

April 2020

What Drives Binge-Watching?
An Economic Theory and Analysis of Impact Factors

Sophia Gaenssle & Philipp Kunz-Kaltenhaeuser[*][#]

Abstract:

Behavioral patterns in media consumption are changing. With the upcoming of video-on-demand platforms, so-called 'binge-watching' gained broad awareness. To the best of our knowledge, this is the first economic analysis explicitly on binge-watching. We approach the phenomenon by arguing that it follows fundamental patterns of addictive behavior. By applying concepts of rational addiction and behavioral economics, we derive (i) a theoretical understanding of binging-watching behavior and (ii) factors increasing the likelihood of binging, especially with modern technologies and digital media services. The decision to binge depends on individual factors such as the accumulation rate of consumption capital (speed of learning and acquiring knowledge), opportunity costs, and the expected value of consumption. Consumption capital in the form of specific knowledge positively influences marginal utility. Moreover, binge-watching is not specific to online streaming services (video-on-demand), but modern platforms facilitate certain factors which increase the consumers' engagement. Non-linear, self-organized video scheduling and a single narrative (coherent plot) increase the likelihood for consumers to binge.

Keywords: binge watching, video on demand, television, streaming, consumption capital, behavioural economics, media economics

JEL-Codes: D03, D11, D90, L82, Z10

---

1. Introduction

'Binging' usually relates to an excessive indulgence of eating or the consumption of alcoholic beverages, as in 'binge drinking' or 'binge eating'. The specific form of binging as in 'binge-watching' refers to excessive consumption of audiovisual content. In contrast to drinking bouts and hedonistic excesses, binge-watching is associated with recent technological changes and modern developments.

In times of digitization, media markets are quickly changing – on demand and supply side. Technological progress, above all the availability of broadband internet, enabled the development of online video consumption and streaming. Video on demand (VoD) services like Netflix or Amazon Prime offer individual, non-linear (i.e. without fixed programming schedule) access to video content, allowing consumers flexible consumption routines. The overall demand for online video content is constantly increasing in industrialized countries,[1] shifting from traditional TV to online streaming (Budzinski & Lindstädt-Dreusicke 2020; Mikos 2016; Budzinski et al. 2019). Especially young consumers adjust to flexible ways of consumption and prefer to choose time and place themselves (Steiner & Xu 2018).[2] This self-administration and independent video scheduling combined with the flat rate availability of content 'on demand' allows consumers to binge-watch through hours of series and films. However, is binge-watching really a new phenomenon, initiated by recent changes in the media industry or just a new buzzword for an old phenomenon?

The body of literature on binge-watching[3] provided by different media scholars is growing in recent times, most of them focusing on finding a definition and/or understanding consumer motivation (inter alia, Jenner 2014, 2016; Pena 2015; Pittman & Sheehan 2015; Deloitte 2016; Mikos 2016; Steiner 2017; Rubenking et al. 2018; Sung et al. 2018; Merrill & Rubenking 2019). To some degree, excessive video consumption and TV addiction is no revolutionary new phenomenon (Matrix 2014; Godinho de Matos & Ferreira 2017; Petersen 2016; Merikivi et al. 2018), since

---

[1] A representative German study in 2018 shows that 60 percent of respondents use online videos weekly (n = 2,009) (Kupferschmitt 2018:428).
[2] See e.g. Statista (2018) for numbers in the US.
[3] For a detailed literature review see Steiner & Xu (2018).

some people have always spent more time in front of the television than they intended to and repeatedly try to reduce the consumed amount (Kubey & Csikszentmihalyi 2002). Whereas former 'couch potato behavior' like TV indulgence has a negative and harmful connotation (as also the linguistics 'binge' implies), binge-watching behavior seems to have gained social acceptance. In scientific studies, positive and negative aspects of binge-watching are mentioned, emphasizing its' ambiguity (Steiner & Xu 2018; Rubenking et al. 2018). According to Steiner (2017) it is a bilateral hybrid change in technology and culture. "It is a symbolic rearticulation of audience control ironically performed by audiences losing control on their own terms." (Steiner & Xu, 2018: 4).

By formalizing binge-watching in an economic model, we logically examine impact factors from a primarily positive (non-normative) perspective. Yet, we find that behavioral economics provide suitable approaches to the 'element of regret' repeatedly mentioned but not formalized in media literature. Therefore, we attempt to answer the research question: What factors drive binge-watching behavior and can economic concepts explain this phenomenon? In this paper, we analyze the mechanisms of binge-watching from an economic point of view and, thus, the factors influencing consumer behavior. It is a detailed and comprehensive study of the different determinants, which should also show to what degree it actually differs from traditional 'TV overconsumption'. To our best knowledge, it is the first economic paper specifically on binge-watching.

The paper is structured as follows. Section 2 reviews the economic literature that our analysis builds upon. In the following section 3, we apply economic concepts to binge-watching, adapt and extend traditional models and, eventually, retrieve specific factors, which influence binge-watching behavior. Section 4 discusses the factors, and section 5 summarizes and concludes.

2. Theoretical Background

The premise of our analysis is that elements of binge-watching behavior follow addictive consumption patterns (not implying serious mental/health issues but regarding obsessive consumption). Hence, we see fit in the application of the economic

theory of consumption capital, based on the seminal work on taste building and addiction by Stigler & Becker (1977). We associate their concept of consumption capital and its role in consumers decisions to the advancements of Adler (1985). To understand the addictive dynamic of binge-watching, and to derive an analysis of the driving factors of binge-watching behavior, we employ the theoretical framework of rational addiction primarily advanced by Becker & Murphy (1988), and Becker, Grossmann, & Murphy (1991). To extend the economic validity of our discussion, we consider behavioral economics on addictive consumption patterns and binging behavior (Chaloupka et al. 1999; Vuchinich & Heather 2007).

Marshall (1890), Stigler & Becker (1977) as well as Adler (1985) agree that there is a dynamic component to the concept of marginal utility. Individuals can develop a positive taste for a good, and therefore the marginal utility derived from consumption of this good can change over time (Stigler & Becker 1977). Preferences evolve when previous knowledge is important for consumption, and "the more you know the more you enjoy" (Adler 1985). In the model of Stigler & Becker (1977) as well as Adler (1985), and Becker & Murphy (1988), consumption behavior is assumed to rely on stock building through consumption, the accumulation of consumption capital. Stigler & Becker (1977) built upon the idea of consumption capital in their seminal work on taste and addiction, by introducing the concept of consumption capital to rational consumer choice theory. Consumption capital theory does not refute the assumption of diminishing marginal utility, but rather expands on it by delivering an explanation for a multitude of consumer behaviors in art, drugs, and media consumption. We apply the concept of consumption capital to binging behavior in media consumption.

In consumption capital theory, past consumption has an impact on future consumption. Current consumption increases future consumption by influencing marginal utility positively over time, rising over time because tastes shifts in their favor (Stigler & Becker 1977). The degree to which past consumption increases current consumption defines the addictive qualities of a good. Addictive goods have adjacent complementarity (Becker & Murphy 1988). This is to say that quantities of consumption over time, e.g. present and future consumption are complementary. Current quantity and quantities in the future are consumed in dynamic conjunction,

4

and rational behavior is an individual's maximization of utility over time, incorporating the interdependence of past, current and future consumption into the utility maximization process. In Adler's (1985) work, consumption capital matters for consumption where it consists of specific knowledge. The acquisition of the specific knowledge for the accumulation of consumption capital occurs in three possible ways: (i) exposure to the good itself (Stigler & Becker 1977), (ii) through network effects e.g. discussions about it with friends including gossip (commonality effects; Adler 1985), (iii) information through media coverage, reading about it online or offline etc. (Adler 2006).

In all the mentioned models of consumption capital, individuals are actively participating in the consumption process of commodities by combining goods provided by the market with their own investments to maximize their utility. The individuals' utility is determined by their investment of their own time, skills, training and other human capital into the objects of choice (Michael & Becker 1973). This induces a maximization problem where individuals face not only monetary restrictions, but also ones of time and other human resources, therefore inducing a time allocation problem (Becker 1965).

As time passes without consumption, the built up stock of consumption capital dissipates (Stigler & Becker 1977; Vuchinich & Heather 2007). It is therefore easier to develop a taste (or an addiction for that matter) when frequency of consumption is high or the depreciation rate on the built-up stock of consumption capital is relatively low (Becker & Murphy 1988). Since time intervals between consumption are short, the depreciation of positive capital stock only occurs in a very short time span, and the rate of depreciation loses relevance for decision-making. Rapid consecutive consumption followed by phases of abstinence (withdrawal) specify binging behavior. Binging behavior is more likely if an individual can later terminate a high level of addiction by an investment in withdrawal. If the consumer´s decision of high addiction is reversible to the original degree of addiction, with low costs of combating the addiction, then a strategy of binging is optimal for maximizing utility over time (Clarke & Danilkina 2006). This stands in contrast to myopic models of addictive behavior, where future values are disregarded completely in the consumption decision (Vuchinich & Heather 2007).

In Stigler & Becker´s model, addicts are "happy addicts". They choose their addiction after rationally considering all alternatives and never regret their decisions. Stigler & Becker (1977) themselves raise omission of time preferences as limitations to their model. Time inconsistency, self-control issues and feelings of regret are not accounted for (Akerlof 1991; Clarke & Danilkina 2006). To account for this common objection, Orphanides & Zervos (1995) introduced a model of rational addiction in which the probability of getting addicted is unknown to the individual. Individuals gamble on whether they get "hooked" through assessing their addictive potential *a priori*[4]. Addiction is the "[…] unintended occasional outcome of experimenting with an addictive good known to provide certain instant pleasure and only probabilistic future harm". With this, individuals can regret their addictive decision when they were convinced, they would not be among the group that loses control over their consumption. Considering the literature, however, the loss of control causing binging behavior and possible feelings of regret after binging are underexplored in economic literature (Chaloupka et al. 2014).

We build on this idea and introduce an element of regret to the economic framework of binging behavior. We employ the concept of expected utility versus realized utility to explain dissatisfaction from individual consumption decisions. Under uncertainty, individuals optimize the expected utility of consumption. In expected utility theory, individuals assign a subjective utility factor to the statistically expected value of an outcome[5] (Bernoulli 1954). Individuals who become addicts therefore can rationally optimize their expected utility, including future utility. However, expected utility can differ from actually obtained experienced utility. If experienced utility falls short of the expected utility level, this is perceived as a loss, and this causes disappointment (Kahneman & Tversky 1979). The individual´s risk-aversion determines the weight of this loss (Tversky & Kahneman 1992). The comparison of the experienced utility level versus the complete price of consumption causes regret. This element of regret occurs since the initial decision was based on

---

[4] The common objections in the application of a rational addiction framework therefore mostly relate to the implicit assumption of perfect foresight, not rational choice itself.

[5] We assume that addicts optimize expected utility with a Bayesian interpretation of probability, meaning they interpret probability as a reasonable expectation based on their state of knowledge and a quantification of personal belief (Cox 1946).

the cost/benefit of the expected utility level. Willingness-to-pay for the level of realized experienced utility might be lower than the full-price paid.

3.   The Economics of Binge-Watching

3.1   Economic Model and Conceptual Framework

With binge-watching behavior, we observe similar dynamics of obsessive behavior found in rational addiction theory. Therefore, we build on the landmark model of Stigler & Becker (1977). In our discussion, we differentiate between two states of consumption: the time of actual consumption (i.e. watching video content) and the time gap between consumptions (i.e. breaks between video sittings).

For both commodities c (video content) and x (all other commodities), the derived utility is dependent on the consumers' investment in time (time allocation). t^c is the individual's decision for consumption of the capital building good (watching), whereas t^x is the consumption of all other commodities, and the individual is faced with the decision of consumption of either ($t^c = 1 - t^x$). We model the period of consumption as the interval between the decisions, to watch (t_i^c) and the decision to do something else (t_i^x). The first period of consumption (i.e. first decision to consume until first decision to do something else) is $[t_1^c, t_1^x]$, the first period of non-consumption $[t_1^x, t_2^c]$. In general, the consumption period is $[t_i^c, t_i^x]$ and non-consumption $[t_i^x, t_{i+1}^c]$. U is a concave function and the utility of an individual, depending on the time allocation between c and x.

$$(1)\ U_i = U(t_i^c, t_i^x)$$

Consumers gather consumption capital by watching video content. They acquire information about content, characters, genre etc. and increase their specific knowledge. In the first period of consumption, the consumer has not acquired any consumption capital, yet. Within this first period, the individual acquires consumption capital C_i^c, depending on the consumption time $[t_i^c, t_i^x]$. The more time the consumers spends watching video content, the more consumption capital she can acquire. λ_i^c is the speed of learning, or accumulation rate in i. β_i^c represents the

maximum level of knowledge that can be acquired (see figure 1 for illustration). In the consumption period, we assume that $t_i^c, \lambda_i^c > 0$, as time and rate of learning can only be positive. Also the overall level of consumption $\beta_i^c > 0$, since knowledge can only be increased during consumption (not reduced, as in "forgetting content").

$$(2) \; C_i^c = \beta_i^c \left(1 - e^{-\lambda_i^c \left(t_i^X - t_i^c\right)}\right)$$

Figure 1:   Changing Consumption Capital for t^c
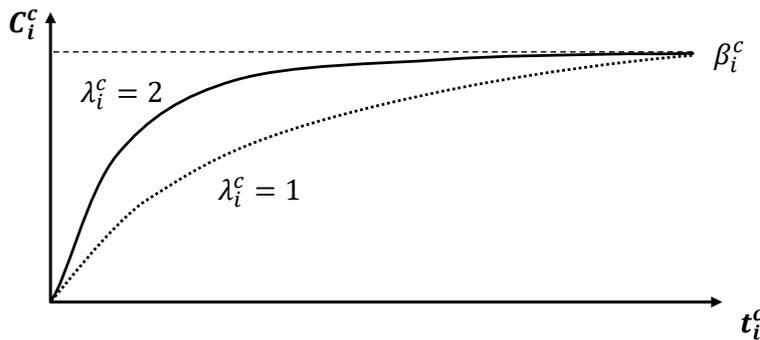
The accumulation of consumption capital depends on λ and β (figure 1), which are functions of endogenous factors α_{en}, and the exogenous factor α_{ex}.

$$(3) \; \lambda_i(\alpha_{en}, \alpha_{ex})$$

$$(4) \; \beta_i(\alpha_{en}, \alpha_{ex})$$

Endogenous factors α_{en} refer to the specific individual and are part of her human capital, i.e. the speed λ_i and total capacity β_i of learning and retrieving knowledge, understanding narrative strands of audiovisual content, remembering different characters or facts etc. The exogenous factor α_{ex} means that some contents are more suitable to acquire specific knowledge with continuous use. For instance, the knowledge of different characters of a series with coherent plot is more useful in the long run (and over various episodes and sittings) than knowing the characters of a feature film without subsequent episodes. Therefore, contents with high α_{ex} have high adjacent complementarity and faster increase λ_i, and in total more β_i accumulation of consumption capital. Both variables can vary over different periods (i.e. later consumption periods might have diminishing returns).

8

In the following break between sittings, the individual chooses to consume x rather than c. The consumption capital acquired during the first sitting, C_i^c, changes to C_i^x. It is a function of the consumption capital of the previous period C_i^c, the non-consumption period $[t_i^x, t_{i+1}^c]$ and, again, the factors λ_i^x and β_i^x. In contrast to the consumption period, during non-consumption, the sign of β_i^x can also be negative ("forgetting" during non-consumption). The growth or reduction of consumption capital is limited to β_i^x and the rate of growth or reduction depends on λ_i^x.

$$(1)\; C_i^x = C_i^c + \beta_i^x \left(1 - e^{\lambda_i^x (t_{i+1}^c - t_i^x)}\right)$$

For $\beta_i^x > 0$, consumption capital increases, i.e. through thinking about the content, developing new ideas or theories and joyful anticipation. Positive network effects (à la Adler 1985, 2006), i.e. talking to friends, reading about the series etc. can also play a role here. The consumption capital stays unchanged $\beta_i^x = 0$, if the consumption specific knowledge is not reduced or increased. Consumption capital can decrease $\beta_i^x < 0$, if consumers forget contents, characters, plots and facts over time, or content is not memorable, hence, in the course of time reducing the acquired consumption capital of previous consumption. See figure 2 for an illustration of the process.

Figure 2:   Changing Consumption Capital for t^x
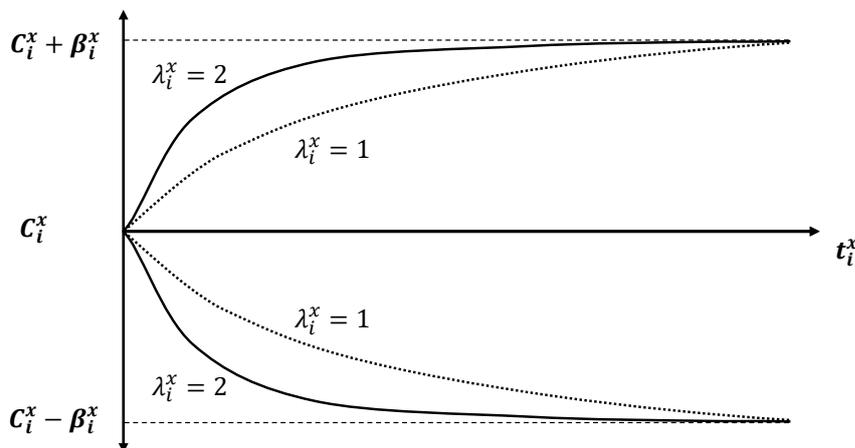
With $t_i^x, \lambda_i > 0$ the sign of β_i^x changes the net outcome

$$\beta_i^x > 0; C_i^c + \beta_i^x$$

A positive β_i^x increases the consumption capital over time, which means that $C_i^c < C_i^x$. For consumers and content with increasing consumption capital it is utility maximizing not to binge watch but watch video contents in separate sessions. The 'desire' and joyful anticipation before the next consumption unit provide an incentive for partitioning.

$$\beta_i^x = 0; \ C_i^c + 0$$

$\beta_1^x = 0$ means that $C_i^c = C_i^x$ is independent of the time period that c is not consumed. For consumers or content features with stable consumption capital, the time between video sittings $[t_i^x, t_{i+1}^c]$ is not decisive. In these cases, it does not matter whether recipients watch all the way through or leave time in between consumption points.

$$\beta_i^x < 0; \ C_0 + (-\beta_i^x)$$

A negative β_i^x decreases the consumption capital over time, which means that $C_i^c > C_i^x$. Since consumption capital translates into future utility of consumption, it is utility maximizing to keep the term $\beta_i^x (1 - e^{\lambda_i^x(t_{i+1}^c - t_i^x)})$ small. This means, it is a rational choice to keep the time between consumptions as short as possible to optimize utility by maximizing consumption capital and, hence, to binge watch video content.

During subsequent video sittings, the consumer builds upon her previously acquired knowledge (consumption capital of the first session +/- changes during the break), with past consumption increasing future utility. Therefore, our model assumes that current utility also depends on a measure of past consumption.

$$(2) \ C_i^c = C_i^x + \beta_i \left(1 - e^{\lambda_i (t_i^x - t_i^c)}\right)$$

Or in general for *n* periods of consumption and non-consumption

$$(3) \ C_n^c = \sum_{i=1}^{n-1} \beta_i^x \left(1 - e^{\lambda_i^x(t_{i+1}^c - t_i^x)}\right) + \sum_{i=1}^{n} \beta_i^c \left(1 - e^{\lambda_i^c(t_i^x - t_i^c)}\right)$$

$$(4) \ C_n^x = C_n^c + \beta_n^x \left(1 - e^{\lambda_n^x(t_n^c - t_n^x)}\right)$$

Eventually, in all subsequent periods, the consumption capital has to be taken into account. Utility is, thus, depending on the accumulated time of consuming $c\,(T_n^c)$,

former consumption capital C_{n-1}, and the accumulative time spent consuming all other commodities x (T_n^x).

$$(5) \quad U_n = U_n(T_n^c, C_{n-1}, T_n^x)$$

When it comes to individual utility, the price of consumption (full-price p) has to be taken into account. The consumer's cost of consumption is the combined (i) total monetary cost (i.e. to acquire access to video content, e.g. subscription/transaction fees) and (ii) time invested in consumption (Adler 1985). Thus, the 'full-price' p of current consumption is comprised of the present price and money value of changes in future utility and earnings (Becker & Murphy 1988). Consequently, the biggest driver to the full-price of consuming video content is opportunity cost. Excessive video consumption takes a lot of time, which could be spend with various other activities.

The utility from the consumption of a marginal unit of content is the derivative function of U_n, or MU_n. To make a decision to keep watching or to quit watching, an individual needs to estimate the expected marginal utility of additional content. This is expressed through the estimated marginal utility $\widehat{MU}$. In every consumption period, $\widehat{MU}_{n+1}$ is the expected level of marginal utility from the consumption in the next period. An individual forms expectations about the utility they will gain from watching the next episode and compares it to the estimated marginal cost of this consumption ($\widehat{MC}_{n+1}$), as in its estimation of the full-price. This is the cost/benefit consideration of binge-watching. An individual will make the decision to keep watching if the expected marginal utility of continued watching exceeds the estimated marginal cost ($\widehat{MU}_{n+1} > \widehat{MC}_{n+1}$), and will stop watching if otherwise ($\widehat{MU}_{n+1} < \widehat{MC}_{n+1}$).

However, expected marginal utility and cost of consumption may actually deviate from true/de facto marginal utility and cost.

$$(6) \quad \widehat{MU}_{n+1} \lesseqgtr MU_{n+1}$$

$$(7) \quad \widehat{MC}_{n+1} \lesseqgtr MC_{n+1}$$

This is a fundamental result of the characteristic of media goods as experience goods. You cannot gauge the quality of a media good before consuming it, and therefore you can never know if you will like it, thus your utility derived from its consumption is unknown and must be estimated. This comparison of expected marginal utility to experienced utility is relevant in the decision to binge-watch: if experienced marginal utility from consumption of this unit of content exceeds the expected utility $\widetilde{MU}_{n+1} < MU_{n+1}$, the probability of addictive behavior increases.

However, if experienced marginal utility from consumption of the marginal unit falls short of the level of expected marginal utility ($\widetilde{MU}_{n+1} > MU_{n+1}$), the individual has made an unfavorable decision to keep watching, which causes regret and resentment. Expectations for the next episode can be high because of cliffhangers, series finales or a consistently high quality of previous episodes. A "letdown" episode might just make individuals reconsider their binging behavior. In case of a mismatch of utility from consumption versus costs, individuals will positively misinterpret utility due to a confirmation bias of their investment, and keep consuming up to a certain threshold (threshold effect). This can lead to the termination of consumption, because losses are over-weighted in decision-making (Tversky & Kahneman 1992). The individual regrets its decision based on a shortcoming of actualized experienced utility versus the expected marginal utility $\widetilde{MU}_{n+1} > MU_{n+1}$, as the willingness-to-pay for this lower level of utility is presumably lower than in the primary consideration. Furthermore, the full-price might be higher than expected $\widetilde{MC}_{n+1} < MC_{n+1}$ and the consumer eventually perceives it as overpayment (relative price-benefit ratio). After continued watching to the point of binge-watching, it becomes painfully clear that the time could have been spend more efficiently, doing other things (consuming x rather than c, e.g. household tasks). Therefore, after actually knowing the utility derived from consumption and readjusting the individual perspective, the consumer might realize that, de facto, marginal costs exceeded experienced marginal utility $MC_{n+1} > MU_{n+1}$. The previously chosen time allocation between c and x was suboptimal and opportunity costs of consumptions were higher than expected. This time inconsistent decision-making causes resentment and regret.

3.2 Discussing the Economics of Binge-Watching

There are multiple definitions of binge-watching available in the literature. In contrast to (qualitative or in-depth) approaches of other social sciences, we want to simplify specifications and reduce complexity, to understand the basic mechanisms and problems behind the phenomenon. Therefore, we compile common elements of the discussion around binge-watching and connect them to our model (chapter 3.1). Repeatedly mentioned characteristics of binge-watching are: *the consumption of audiovisual content of (a) a single program (sometimes strictly defined as series only), (b) in a non-linear way (self-administration), (c) over an extensive period of time, (d) focused and uninterrupted in one sitting, often including (e) an element of regret and self-harm.* (inter alia, Merikivi et al. 2018; Merrill & Rubenking 2019; Mikos 2016; Pena 2015; Rubenking et al. 2018; Deloitte 2016; Steiner & Xu 2018; Sung et al. 2018; Jenner 2016).

a) $\lambda_i^c\,(\alpha_{en},\alpha_{ex})$, $\beta_i^c(\alpha_{en},\alpha_{ex})$: An element repeatedly found in the literature is the restriction to a *single program* or narrative; understood as serialized content or the genre "series" (inter alia, Pena 2015; Jenner 2016). This actively excludes watching various different contents within one sitting i.e. combining different films one after the other or switching between series. Consequently, watching eight hours of Netflix and switching though different episodes and films would (under this restriction) not be considered binge-watching. Applying economic theory in the context of our model, on the one hand, (i) series are specifically suitable for marathon watching, especially when containing continuous plots, cliffhangers and developing characters. Sticking to one series increases the addictive character and the likelihood to get hooked on a topic, since the consumer is able to accumulate more specific consumption capital C (specific investments; cannot be transferred to other contents). Serialized content increases the addictive qualities of the content α_{ex} and therefore the speed (λ_i^c) and total amount (β_i^c) of building consumption capital and, thus, future utility. Consequently, when the last available season of a series ends, consumers are able to terminate their binging behavior at rela-

tively low cost (Clarke & Danilkina 2006). On the other hand, (ii) the accumulation speed λ and the maximum level of consumption capital β also depend on the individual internal factor α_{en}. Extensive video consumption of the ever-same story might bore some consumers and stimulate the initiative to switch genre, platform, or both. For variety-seeking consumers or consumers with heterogeneous preferences, the personal α_{en} would decrease in the process, as they get bored and stop paying attention. In this moment, depending on specific utility functions, some consumers stop watching, searching for new stimuli. They would switch between offers to satisfy the respective needs (keep α_{en} and α_{ex} high). The act of binge-watching is consequently not restrictively limited to a specific genre or platform. If a consumer has a strong preference for staying in front of the screen and consuming further videos, she will do so. Variety-seeking heavy users, hence, maximize their individual utility and freely choose to get entertained by television, VoD or even advertising financed VoD like YouTube and binge watch hours of video content in one sitting. *Summary a): Serial content increases α_{ex} and consequently the probability of binge-watching, but binge-watching behavior is not generally limited to a specific genre or platform.*

b) Consumers choose time gap $[t_i^x, t_{i+1}^c]$ between videos freely depending on the sign of β_i^x: In contrast to traditional TV, VoD services provide the possibility of self-organized, *non-linear* video consumption. Consumers are flexible to decide what to watch and, in this case more importantly, when to watch. The availability of (continuous) content in a structure of self-administration gives recipients the choice of binge-watching throughout the desired content. Unlike traditional TV, the program does not have to be adjusted to a pooled target group, but only to personal preferences. Therefore, consumers do not have to wait a day/week etc. to watch the next episode or sequel. Instead, they choose the time gap (as in the interval $[t_i^x, t_{i+1}^c]$ freely (i.e. the time gap is internalized to the individual's decision-making; before, it was externally set by the program schedule). Depending on the sign of β_i^x,

it can be favorable to binge-watch (if $\beta_i^x < 0$) and minimize the period of consumption of $x\,[t_i^x, t_{i+1}^c]$, before choosing to consume c again). Consumption capital of the previous consumption can decrease, if consumers forget characters, plots or the content is not catchy and memorable. Engaging in binge-watching, consumption capital C builds up quicker, than if they had to wait another week for the next episode of their favorite TV-show to air. A strong preference for the present (myopic) and $\beta_i^x < 0$ (see 3.1) explains, why binge-watching is preferred over spacing out the consumption over time, e.g. watching one episode every day. Eventually, although TV addictions or the 'over-consumption of video content in an obsessive manner' is nothing particularly new, the likelihood to get stuck in an addictive watching circle has increased with the efficiency of modern streaming services (small/flexible time gaps, quick accumulation of C). *Summary b): Modern technologies allow self-administration and non-linear consumption (small/flexible $[t_i^x, t_{i+1}^c]$), increasing the probability of binge-watching (if $\beta_i^x < 0$).*

c) Platforms minimizing time between sittings $[t_i^x, t_{i+1}^c]$: The *focused* consumption refers to the actual act of watching the content, rather than only using television as side entertainment or background 'noise'. Serial consumption, *uninterrupted in one sitting*, translates into continuous repetition of consumption decisions. The number of videos and frequency of usage considered in the literature (Pierce-Grove 2017; Sung et al. 2018) mean the repeated decision-making of consuming the next unit in rapid succession. (Re)deciding to continue watching (over and over again) is therefore referred to as a defining characteristic of a binge session. Once one episode, film or clip ended, the consumer decides to continue. Platform characteristics like smart recommender systems and auto-play formats decrease the time in-between consumption decisions and make it harder to decide actively against further consumption. Content providers have an incentive to keep the consumers on the platform, using sophisticated algorithms (Budzinski &

Lindstädt-Dreusicke 2020; Gaenssle & Budzinski 2019). This reduces the time to reconsider the full-price p of future consumption (possible opportunity costs or appropriate discount rates of future utility), increasing the probability of continuing (see point d for further full-price argumentation). In traditional TV or DVD, $[t_i^x, t_{i+1}^c]$ was longer, e.g. changing DVDs, and only heavy users continued watching. Modern platform characteristics therefore increase the probability of binge-watching by decreasing the breaks between videos. *Summary c): Modern technologies decrease the break between videos $[t_i^x, t_{i+1}^c]$, reducing the time to reconsider the full-price of future consumption, thus, increasing binge-watching behavior.*

d) High $[t_i^c, t_i^x]$, low full-price p: The question what constitutes a video session as a binge (how many videos, for how long/*extensive period of time*) is crucial, yet, difficult. Past studies diverge in stating that 2-4h of the same show (Smith-Frigerio 2016; Petersen 2016) or rather the number of episodes (Pierce-Grove 2017) are an accurate delineator of binge-watching. A survey conducted by Netflix in 2013 states that 73 percent of participants define binge-watching as watching between 2-6 episodes of a TV show, while 61 percent of them regularly engage into binging (Netflix 2013; Rubenking et al. 2018). Considering the full-price p and thereby the time t_i^c invested by the consumer, the mere number of videos seems inappropriate to calculate the cost of consumption and its effects. For instance, comparing three 20-minute sitcom episodes of 'The Big Bang Theory' to three episodes of 'Game of Thrones' at approximately 60-70 minutes each means 1h versus 3h. Consequently, the number of videos, and thus, the number of consumption decisions, but also the overall time invested in consumption is decisive, since the time makes up a majority of p paid by the consumer. Depending on the consumer's occupation, age and responsibilities, opportunity costs vary a lot. Low opportunity costs decrease the full-price p, hence demand increases. Consumers with small p are consequently more likely to binge-watch. The flat rate pricing models commonly used by VoD streaming services decrease

monetary cost per unit and increase the importance of opportunity costs in p. The monthly paid flat rate price could be considered fixed costs independent of quantity, or even sunk costs (Tversky & Kahneman 1992; Train et al. 1987). From a behavioral economics perspective, by bypassing the individual's loss aversion of having to buy single episodes, flat rate pricing facilitates binge-watching. *Summary d): Low full-price (especially opportunity costs) increase the demand and watching-interval $[t_i^c, t_i^x]$ and likelihood for binge-watching. Flat rate pricing models further facilitate binge-watching.*

e) $MU \lesseqgtr MC$, marginal cost exceeding marginal utility: Addictive consumption habits often come with an *element of dissatisfaction or regret*, when people spend more time than they intended to or try to reduce their consumption. Recent studies on consumer behavior show that binge-watchers feel powerless and defeated when they consumed more episodes than they originally intended to (Perks 2015; Feijter et al. 2016; Flayelle et al. 2017; Walton-Pattison et al. 2018). Drawing from expected utility theory, an individual makes a decision to continue consuming based on the expected utility of the next unit of video content. Their expectation of how good it will be drives people to watch the next episode. Due to experience good characteristics, consumers cannot know the quality of the next unit of video consumption and have to estimate it. If the actualized utility of consuming the next episode does not match the expected utility, it in hindsight might not warrant the investment of the full-price. A thoughtful cost-benefit assessment might need more than a view seconds between videos. Platform characteristics (point c), which shorten the time between videos, make a conscious and time-consistent decision more difficult. The harsh reality of opportunity cost of overconsumption becomes painfully clear in later periods, causing regret and indicating dynamic inconsistency of preferences, i.e. realizing missed responsibilities and to-dos after a whole day of binge-watching. A study by Riddle et al. (2018) differentiates between intentional and unintentional watching behavior. Putting this in context of our model, the consumer intentionally plans a period of consumption, choosing a time span with (i) low

opportunity cost e.g. in the evening and (ii) maximizes utility according to personal preferences i.e. watching with the partner or friends, or using the consumption period as reward for accomplished work etc. For such intentional/planned consumption, the estimation of cost versus utility is more accurate to the true (actualized) values, because it is easier for an individual to estimate opportunity costs and utility of consumption when making a conscious decision, rather than unintentionally binging (getting stuck). Hence, unintentional binge-watching is more likely to cause subsequent regret and time-inconsistent behavior; the result of actualized experienced utility falling short of expected utility and, marginal costs exceeding marginal utility in retrospect. *Summary e): Experience good characteristics necessitate a pre-consumption estimation of future cost and utility ($\widehat{MU}_{n+1} \lesseqgtr \widehat{MC}_{n+1}$). An element of regret can be caused, if actualized costs exceed actualized utility ($MC_{n+1} > MU_{n+1}$). Conscious decisions and intentional binge-watching can minimize this element of regret.*

Summing up all factors, which increase the likelihood of binge-watching:

Table 1: Factors increasing Likelihood of Binge-Watching

Factor	Variable	Explanation	Role of New Technologies (increasing probability of binge-watching)
Individual (internal) factor of human capital	High α_{en} in consumption of c	Speed and total amount of knowledge the consumer can acquire. If an individual quickly accumulates a lot of knowledge, this increases consumption capital and utility (likelihood of binge-watching).	
External factor of content	High α_{ex} in consumption of c $\beta_i^x < 0$	For some contents specific knowledge can be accumulated more rapidly e.g. serialized content with continuous plots, which fuels binge-watching. $\beta < 0$ reduces consumption capital while not consuming c (forgetting content, facts, etc.) therefore it is favorable to binge-watch content.	↑ serial content ↑ flat rate availability
Price of consumption/ opportunity cost	Low full-price p	If an individual has low opportunity costs, it increases the probability of making a decision to watch (t_c) and, thus, binge-watching behavior. Flat rate pricing facilitates binge-watching, bypassing the individual's loss aversion of buying single episode.	↑ flat rate pricing

| Time intervals between consumptions | Minimizing $[t_i^x, t_{i+1}^c]$ if $\beta_i^x < 0$ | (i) The consumer chooses breaks between sittings freely in self-administration. Small time gaps between sittings (minimizing $[t_{i+1}^c - t_i^x]$), are favorable if $\beta_i^x < 0$ to optimize utility | ↑ non-linear programming ↑ flat rate availability ↑ availability of full seasons |
| | | (ii) Platforms use different methods to minimize break between videos small, to keep the consumer on the platform. It is more difficult to reconsider properly future cost and utility of consumption in such short breaks. | ↑ auto-play functions ↑ algorithms/recommender systems |

4. Conclusion

We find that binge-watching follows addictive patterns and therefore rational addiction theory can be applied to the underlying economic decision-making processes. We argue that the accumulation of positive consumption capital, shifting marginal utility positively is a meaningful explanation to binge-watching behavior. Factors that drive binge-watching are found in a combination of factors internal to individuals (inter alia, speed of learning) as well as external factors (content and technical factors). *Internal factors* in our model are the rate of accumulation of specific knowledge and the individual's opportunity costs. Low opportunity costs of individuals are a major driver in binge-watching behavior, because they account for a large share of the full-price of consumption. Consumers, who accumulate specific knowledge about media content faster gather consumption capital faster and are therefore more likely to binge.

Our model demonstrates that for some individuals it is rationally utility maximizing to binge-watch. For some consumer-content combinations, binge-watching can be utility-maximizing, since gaps between video sittings have negative impact on the acquired consumption capital e.g. because they lose specific knowledge as they forget intricacies of the story or the content is not explicitly memorable. In these cases, recipients minimize their loss of consumption capital between sittings by minimizing the self-administered time in-between consumptions of non-linear media content. Other individuals can maximize their utility by spacing out media consumption because it optimizes their consumption capital and therefore marginal utility.

External factors drive binge-watching behavior. The coherent plot of series and content availability lead to a rapid accumulation of consumption capital by consumers. Additionally, VoD streaming services minimize the time between consumptions by implementing auto-play functions and algorithmic preference matching, making it as easy as possible to keep watching. The consumer-administered time between consumptions is a major difference to traditional TV where time between consumptions was externally dictated by linear media programming, limiting binging behavior on serial content. Therefore, the technical characteristics of modern VoD streaming services and serial media content facilitate binging behavior. The phenomenon of binge-watching is not specific to series and does not only occur in modern digital media services. Yet, the specific characteristics of serial content and technical abilities of video on demand streaming foster binge-watching.

We extend expected utility theory to explain an element of regret after overconsumption. Regret arises when the utility from the next episode and costs of watching it do not counterbalance. Due to experience good characteristics of audiovisual content, the consumer has to estimate future cost and utility. If actualized utility falls short of estimated utility and marginal cost exceed marginal utility, the consumer eventually realizes that she 'overpaid'. Unintended binge-watching sessions (getting stuck) are more likely to end regretting the decision than intentional ones, since cost-benefit assessments can be more accurate. Therefore, implications from our analysis are that not for all individuals binge-watching is attributed to a loss of control, or a failure to make a rational choice.

From a broader perspective, the seriousness of the phenomenon depends on the overall extend of the individual problem. Does the binging behavior come with an element of regret? How much time does the consumer actually spend on consumption (i.e. are two episodes really "a problem" and actual "binging"/overconsumption)? Does binge-watching foster complementary harmful behavior (eating excessive calories from junk food while binge-watching or negligence of social contacts etc.)? These effects are not taken into account within our model, but can increase the cost of consumption, if consumers do not wish to engage into such habits or regret past decisions

References

Adler, M. 1985: Stardom and Talent, in: *American Economic Review (1)* 75, 208–212.

Adler, M. 2006: Stardom and Talent, in: *Handbook of the Economics of Art and Culture*, Ginsburgh, V., and Throsby, C. D. (Eds.), Handbooks in economics, 25, Elsevier, Amsterdam, 895–906.

Akerlof, G. A. 1991: Procrastination and Obedience, Papers and Proceedings of the Hundred and Third Annual Meeting of the American Economic Association, in: *The American Economic Review (2)* 81, 1–19.

Becker, G. S. 1965: A Theory of the Allocation of Time, in: *The Economic Journal (299)* 75, 493–517.

Becker, G. S., Grossman, M. & Murphy, K. M. 1991: Rational Addiction and the Effect of Price on Consumption, in: *The American Economic Review (2)* 81, 237–241.

Becker, G. S. & Murphy, K. M. 1988: A Theory of Rational Addiction, in: *Journal of Political Economy (4)* 96, 675–700.

Bernoulli, D. 1954: Exposition of a New Theory on the Measurement of Risk, originally published in 1738, in: *Econometrica (1)* 22, 23–36.

Budzinski, O., Gaenssle, S. & Kunz-Kaltenhäuser, P. 2019: How Does Online Streaming Affect Antitrust Remedies to Centralized Marketing?: The Case of European Football Broadcasting Rights, in: *International Journal of Sport Finance (3)* 14, 147–157.

Budzinski, O. & Lindstädt-Dreusicke, N. 2020: Antitrust policy in video-on-demand markets: the case of Germany, in: *Journal of Antitrust Enforcement jnaa001*.

Chaloupka, F. J., Grossman, M. & Bickel, W. K. 2014: Economic Analysis of Substance Use and Abuse: An Integration of Econometric and Behavioral Economic Research, *National Bureau of Economic Research Conference report,* University of Chicago Press.

Chaloupka, F. J., Grossmann, M., Bickel, W. K. & Saffer, H. 1999: The Economic Analysis of Substance Use and Abuse: An Integration of Econometric and Behavioral Economic Research, University of Chicago Press.

Clarke, H. & Danilkina, S. 2006: Talking Rationally About Rational Addiction, Department of Economics and Finance, La Trobe University.

Cox, R. T. 1946: Probability, Frequency and Reasonable Expectation, in: *American Journal of Physics (1)* 14*, 1–13.

Deloitte 2016: Digital democracy survey: A multi-generational view of consumer technology, media and telecom trends, 10: www.deloitte.com/us/tmttrends.

Feijter, D. de, Khan, V.-J., and van Gisbergen, M.: Confessions of A 'Guilty' Couch Potato Understanding and Using Context to Optimize Binge-watching Behavior, in: *TVX'16: Proceedings of the ACM International Conference on Interactive Experiences for TV and Online Video June 22-24, 2016, Chicago, Il, USA*, Whitney, P., Murray, J., Basapur, S., Ali Hasan, N., and Huber, J. (Eds.), the ACM International Conference, Chicago, Illinois, USA, Association for Computing Machinery, New York, New York, 59–67 2016.

Flayelle, M., Maurage, P. & Billieux, J. 2017: Toward a qualitative understanding of binge-watching behaviors: A focus group approach, in: *Journal of behavioral addictions (4)* 6*, 457–471.

Gaenssle, S. & Budzinski, O. 2019: Stars in Social Media: New Light Through Old Windows?*, Ilmenau Economics Discussion Papers,* 25 *(123)*.

Godinho de Matos, M. & Ferreira, P. 2017: Binge Yourself Out the Effect of Binge Watching on the Subscription of Video on Demand, in: *SSRN Electronic Journal*.

Jenner, M. 2014: Is this TVIV?: On Netflix, TVIII and binge-watching, in: *New Media & Society (2)* 18*, 257–273.

Jenner, M. 2016: Binge-watching: Video-on-demand, quality TV and mainstreaming fandom, in: *International Journal of Cultural Studies (3)* 20*, 304–320.

Kahneman, D. & Tversky, A. 1979: Prospect Theory: An Analysis of Decision under Risk, in: *Econometrica (2)* 47*, 263–291.

Kubey, R. & Csikszentmihalyi, M. 2002: Television addiction is no mere metaphor, in: *Scientific American (286)* 2*, 74–80.

Kupferschmitt, T. 2018: Onlinevideo-Reichweite und Nutzungsfrequenz wachsen, Altersgefälle bleibt: Ergebnisse der ARD/ZDF-Onlinestudie 2018, in: *Media Perspektiven 9/2018,* 427–437.

Marshall, A. 1890: Principles of Economics, 8.

Matrix, S. 2014: The Netflix Effect: Teens, Binge Watching, and On-Demand Digital Media Trends, in: *Jeunesse: Young People, Texts, Cultures (1)* 6, 119–138.

Merikivi, J., Salovaara, A., Mäntymäki, M. & Zhang, L. 2018: On the way to understanding binge watching behavior: The over-estimated role of involvement, in: *Electronic Markets (1)* 28, 111–122.

Merrill, K. & Rubenking, B. 2019: Go Long or Go Often: Influences on Binge Watching Frequency and Duration among College Students, in: *Social Sciences (1)* 8, 10.

Michael, R. T. & Becker, G. S. 1973: On the New Theory of Consumer Behavior, in: *Swedish Journal of Economics (75),* 378–396.

Mikos, L. 2016: Digital Media Platforms and the Use of TV Content: Binge Watching and Video-on-Demand in Germany, in: *Media and Communication (3)* 4, 154.

Netflix 2013: Netflix Declares Binge Watching is the New Normal: https://www.prnewswire.com/news-releases/netflix-declares-binge-watching-is-the-new-normal-235713431.html.

Pena, L. L. 2015: Breaking Binge: Exploring The Effects Of Binge Watching On Television Viewer Reception, Dissertations ALL. 283, Syracuse University.

Perks, L. G. 2015: Media marathoning: Immersions in morality, Lexington Books, Lanham, Maryland.

Petersen, T. G. 2016: To binge or not to binge: A qualitative analysis of college students' binge watching habits, in: *Florida Communication Journal (44),* 77–88.

Pierce-Grove, R. 2017: How journalists frame binge watching, in: *First Monday (1)* 22.

Pittman, M. & Sheehan, K. 2015: Sprinting a media marathon: Uses and gratifications of binge-watching television through Netflix, in: *First Monday (10)* 20.

Riddle, K., Peebles, A., Davis, C., Xu, F. & Schroeder, E. 2018: The addictive potential of television binge watching: Comparing intentional and unintentional binges, in: *Psychology of Popular Media Culture (4)* 7, 589–604.

Rubenking, B., Bracken, C. C., Sandoval, J. & Rister, A. 2018: Defining new viewing behaviours: What makes and motivates TV binge-watching?, in: *International Journal of Digital Television (1)* 9, 69–85.

Smith-Frigerio, S. 2016: Media Marathoning as Meaningful Experience, in: *Journal of Broadcasting & Electronic Media (2)* 60, 364–366.

Statista 2018: Netflix Is Americans' Platform of Choice for TV Content: https://www.statista.com/chart/14559/americans-favorite-tv-platforms/, last access: 9th October 2019.

Steiner, E. 2017: Binge-Watching in practice: The rituals, motives and feelings of streaming video viewers, in: *The Age of Netflix: Critical Essays on Streaming Media, Digital Delivery and Instant Access*, Barker, C., and Wiatrowski, M. (Eds.), McFarland & Company, Jefferson, NC, 141–161.

Steiner, E. & Xu, K. 2018: Binge-watching motivates change, in: *Convergence: The International Journal of Research into New Media Technologies (4)* 318, 1-20.

Stigler, G. J. & Becker, G. S. 1977: De Gustibus Non Est Disputandum, in: *The American Economic Review (2)* 67, 76–90.

Sung, Y. H., Kang, E. Y. & Lee, W.-N. 2018: Why Do We Indulge?: Exploring Motivations for Binge Watching, in: *Journal of Broadcasting & Electronic Media (3)* 62, 408–426.

Train, K. E., McFadden, D. L. & Ben-Akiva, M. 1987: The Demand for Local Telephone Service: A Fully Discrete Model of Residential Calling Patterns and Service Choices, in: *The RAND Journal of Economics (1)* 18, 109.

Tversky, A. & Kahneman, D. 1992: Advances in prospect theory: Cumulative representation of uncertainty, in: *Journal of Risk and Uncertainty (4)* 5, 297–323.

Vuchinich, R. E. & Heather, N. 2007: Choice, behavioural economics and addiction, Elsevier, Amsterdam.

Walton-Pattison, E., Dombrowski, S. U. & Presseau, J. 2018: 'Just one more episode': Frequency and theoretical correlates of television binge watching, in: *Journal of health psychology (1)* 23, 17–24.

Diskussionspapiere aus dem Institut für Volkswirtschaftslehre
der Technischen Universität Ilmenau

Nr. 69   *Budzinski, Oliver:* Empirische Ex-Post Evaluation von wettbewerbspoliti-schen Entscheidungen: Methodische Anmerkungen, Januar 2012.

Nr. 70   *Budzinski, Oliver:* The Institutional Framework for Doing Sports Business: Principles of EU Competition Policy in Sports Markets, January 2012.

Nr. 71   *Budzinski, Oliver; Monostori, Katalin:* Intellectual Property Rights and the WTO,   April 2012.

Nr. 72   *Budzinski, Oliver:* International Antitrust Institutions, Juli 2012.

Nr. 73   *Lindstädt, Nadine; Budzinski, Oliver:* Newspaper vs. Online Advertising - Is There a Niche for Newspapers in Modern Advertising Markets?

Nr. 74   *Budzinski, Oliver; Lindstädt, Nadine:* Newspaper and Internet Display Advertising - Co-Existence or Substitution?, Juli 2012b.

Nr. 75   *Budzinski, Oliver:* Impact Evaluation of Merger Control Decisions, August 2012.

Nr. 76   *Budzinski, Oliver; Kuchinke, Björn A.:* Deal or No Deal? Consensual Arrangements as an Instrument of European Competition Policy, August 2012.

Nr. 77   *Pawlowski, Tim, Budzinski, Oliver:* The (Monetary) Value of Competitive Balance for Sport Consumers, Oktober 2012.

Nr. 78   *Budzinski, Oliver:* Würde eine unabhängige europäische Wettbewerbsbehörde eine bessere Wettbewerbspolitik machen?, November 2012.

Nr. 79   *Budzinski, Oliver; Monostori, Katalin; Pannicke, Julia:* Der Schutz geistiger Eigentumsrechte in der Welthandelsorganisation - Urheberrechte im TRIPS Abkommen und die digitale Herausforderung, November 2012.

Nr. 80   *Beigi, Maryam H. A.; Budzinski, Oliver:* On the Use of Event Studies to Evaluate Economic Policy Decisions: A Note of Caution, Dezember 2012.

Nr. 81   *Budzinski, Oliver; Beigi, Maryam H. A.:* Competition Policy Agendas for Industrializing Countries, Mai 2013.

Nr. 82   *Budzinski, Oliver; Müller, Anika:* Finanzregulierung und internationale Wettbewerbsfähigkeit: der Fall Deutsche Bundesliga, Mai 2013.

Nr. 83 *Doose, Anna Maria:* Methods for Calculating Cartel Damages: A Survey, Dezember 2013.

Nr. 84 *Pawlowski, Tim; Budzinski, Oliver:* Competitive Balance and Attention Level Effects: Theore-tical Considerations and Preliminary Evidence, März 2014.

Nr. 85 *Budzinski, Oliver:* The Competition Economics of Financial Fair Play, März 2014.

Nr. 86 *Budzinski, Oliver; Szymanski, Stefan:* Are Restrictions of Competition by Sports Associations Horizontal or Vertical in Nature?, März, 2014.

Nr. 87 *Budzinski, Oliver:* Lead Jurisdiction Concepts Towards Rationalizing Multiple Competition Policy Enforcement Procedures, Juni 2014.

Nr. 88 *Budzinski, Oliver:* Bemerkungen zur ökonomischen Analyse von Sicherheit, August 2014.

Nr. 89 *Budzinski, Oliver; Pawlowski, Tim:* The Behavioural Economics of Competitive Balance: Implications for League Policy and Championship Management, September 2014.

Nr. 90 *Grebel, Thomas; Stuetzer, Michael:* Assessment of the Environmental Performance of European Countries over Time: Addressing the Role of Carbon, September 2014.

Nr. 91 *Emam, Sherief; Grebel, Thomas:* Rising Energy Prices and Advances in Renewable Energy Technologies, July 2014.

Nr. 92 *Budzinski, Oliver; Pannicke, Julia:* Culturally-Biased Voting in the Eurovision Song Contest: Do National Contests Differ?, December 2014.

Nr. 93 *Budzinski, Oliver; Eckert, Sandra:* Wettbewerb und Regulierung, März 2015.

Nr. 94 *Budzinski, Oliver; Feddersen, Arne:* Grundlagen der Sportnachfrage: Theorie und Empirie der Einflussfaktoren auf die Zuschauernachfrage, Mai 2015.

Nr. 95 *Pannicke, Julia:* Abstimmungsverhalten im Bundesvision Song Contest: Regionale Nähe versus Qualität der Musik, Oktober 2015.

Nr. 96 *Budzinski, Oliver; Kretschmer, Jürgen-Peter:* Unprofitable Horizontal Mergers, External Effects, and Welfare, October 2015.

Nr. 97 *Budzinski, Oliver; Köhler, Karoline Henrike:* Is Amazon The Next Google?, October 2015.

Nr. 98 *Kaimann, Daniel; Pannicke, Julia:* Movie success in a genre specific contest: Evidence from the US film industry, December 2015.

Nr. 99 *Pannicke, Julia:* Media Bias in Women's Magazines: Do Advertisements Influence Editorial Content?, December 2015.

Nr. 100 *Neute, Nadine; Budzinski, Oliver:* Ökonomische Anmerkungen zur aktuellen Netzneutralitätspolitik in den USA, Mai 2016.

Nr. 101 *Budzinski, Oliver; Pannicke, Julia:* Do Preferences for Pop Music Converge across Countries? - Empirical Evidence from the Eurovision Song Contest, Juni 2016.

Nr. 102 *Budzinski, Oliver; Müller-Kock, Anika:* Market Power and Media Revenue Allocation in Professonal Sports: The Case of Formula One, Juni 2016.

Nr. 103 *Budzinski, Oliver:* Aktuelle Herausforderungen der Wettbewerbspolitik durch Marktplätze im Internet, September 2016.

Nr. 104 *Budzinski, Oliver:* Sind Wettbewerbe im Profisport Rattenrennen?, Februar 2017.

Nr. 105 *Budzinski, Oliver; Schneider, Sonja:* Smart Fitness: Ökonomische Effekte einer Digitalisierung der Selbstvermessung, März 2017.

Nr. 106 *Budzinski, Oliver; Pannicke, Julia:* Does Popularity Matter in a TV Song Competition? Evidence from a National Music Contest, April 2017.

Nr. 107 *Budzinski, Oliver; Grusevaja, Marina:* Die Medienökonomik personalisierter Daten und der Facebook-Fall, April 2017.

Nr. 108 *Budzinski, Oliver:* Wettbewerbsregeln für das Digitale Zeialter – Die Ökonomik personalisierter Daten, Verbraucherschutz und die 9.GWB-Novelle, August 2017.

Nr. 109 *Budzinski, Oliver:* Four Cases in Sports Competition Policy: Baseball, Judo, Football, and Motor Racing, September 2017.

Nr. 110 *Budzinski, Oliver:* Market-internal Financial Regulation in Sports as an Anticompetitive Institution, October 2017.

Nr. 111 *Bougette, Patrice; Budzinski, Oliver; Marty, Frédéric:* EXPLOITATIVE ABUSE AND ABUSE OF ECONOMIC DEPENDENCE: WHAT CAN WE LEARN FROM THE INDUSTRIAL ORGANIZATION APPROACH?, December 2017.

Nr. 112 *Budzinski, Oliver; Gaenssle, Sophia:* The Economics of Social Media Stars: An Empirical Investigation of Stardom, Popularity, and Success on YouTube, Januar 2018.

Nr. 113 *Gaenssle, Sophia; Budzinski, Oliver; Astakhova Daria:* Conquering the Box Office: Factors, influencing Success of International Movies in Russia, Mai 2018.

Nr. 114 *Budzinski, Oliver; Stöhr, Annika:* Die Ministererlaubnis als Element der deutschen Wettbewerbsordnung: eine theoretische und empirische Analyse, Juli 2018.

Nr. 115 *Budzinski, Oliver; Kuchinke, Björn A.:* Modern Industrial Organization Theory of Media Markets and Competition Policy Implications, September 2018.

Nr. 116 *Budzinski, Oliver; Lindstädt-Dreusicke, Nadine:* The New Media Economics of Video-on-Demand Markets: Lessons for Competition Policy, Oktober 2018.

Nr. 117 *Budzinski, Oliver; Stöhr, Annika:* Competition Policy Reform in Europe and Germany – Institutional Change in the Light of Digitization, November 2018.

Nr. 118 *Budzinski, Oliver; Noskova, Victoriia; Zhang, Xijie:* The Brave New World of Digital Personal Assistants: Benefits and Challenges from an Economic Perspective, December 2018.

Nr. 119 *Bougette, Patrice; Budzinski, Oliver & Marty, Frédéric:* EXPLOITATIVE ABUSE AND ABUSE OF ECONOMIC DEPENDENCE: WHAT CAN WE LEARN FROM AN INDUSTRIAL ORGANIZATION APPROACH? [Updated Version 2018], December 2018.

Nr. 120 *Bartelt, Nadja:* Bundling in Internetmärkten - Ökonomische Besonderheiten, Wettbewerbseffekte und Regulierungsimplikationen, Dezember 2018.

Nr. 121 *Budzinski, Oliver; Feddersen, Arne:* Measuring Competitive Balance in Formula One Racing, März 2019.

Nr. 122 *Budzinski, Oliver; Kohlschreiber, Marie; Kuchinke, Björn A. & Pannicke, Julia:* Does Music Quality Matter for Audience Voters in a Music Contest, März 2019.

Nr. 123 *Gaenssle, Sophia; Budzinski, Oliver:* Stars in Social Media: New Light Through Old Windows?, April 2019.

Nr. 124 *Stöhr, Annika; Budzinski, Oliver:* Ex-post Analyse der Ministererlaubnis-Fälle - Geminwohl durch Wettbewerbsbeschränkungen?, April 2019.

Nr. 125 *Budzinski, Oliver; Lindstädt-Dreusicke, Nadine:* The New Media Economics of Video-on-Demand Markets: Lessons for Competition Policy (Updated Version), May 2019.

Nr. 126 *Stöhr, Annika; Noskova, Victoriia; Kunz-Kaltenhäuser, Philipp; Gaenssle, Sophia & Budzinski, Oliver:* Happily Ever After? – Vertical and Horizontal Mergers in the U.S. Media Industry, June 2019.

Nr. 127 *Budzinski, Oliver; Stöhr, Annika:* Der Ministererlaubnis-Fall Miba/Zollern: Europäische Champions statt Wettbewerb?, Juni 2019.

Nr. 128 *Budzinski, Oliver; Gaenssle, Sophia & Kunz-Kaltenhäuser, Philipp:* How Does Online Streaming Affect Antitrust Remedies to Centralized Marketing? The Case of European Football Broadcasting, Rights, July 2019.

Nr. 129 *Budzinski, Oliver; Haucap, Justus:* Kartellrecht und Ökonomik: Institutions Matter!, July 2019.

Nr. 130 *Budzinski, Oliver & Stöhr, Annika:* Public Interest Considerations in European Merger Control Regimes, August 2019.

Nr. 131 *Gaenssle, Sophia; Budzinski, Oliver & Astakhova:* Daria: Conquering the Box Office: Factors Influencing Succes of International Movies in Russia (Update), October 2019.

Nr. 132 *Stöhr, Annika; Budzinski, Oliver & Jasper, Jörg:* Die Neue E.ON auf dem deutschen Strommarkt – Wettbewerbliche Auswirkungen der innogy-Übernahme, November 2019.

Nr. 133 *Budzinski, Oliver; Grebel, Thomas; Wolling, Jens & Zhang, Xijie:* Drivers of Article Processing Charges in Open Access, December 2019.

Nr. 134 *Gaenssle, Sophia; Kuchinke, Björn, A.:* Die Hörspielserie „Die drei ???" – Der wirtschaftliche Erfolg und Gründe dafür, Januar 2020.

Nr. 135 *Budzinski, Oliver:* The Economics of International Competition Policy: New Challenges in the Light of Digitization?, January 2020.

Nr. 136 *Dittmann, Heidi & Kuchinke, Björn A.:* Die Theorie mehrseitiger Marktplätze in der US-amerikanischen und deutschen Zusammenschlusskontrolle: Eine empirische Untersuchung für den Mediensektor, Januar 2020.

Nr. 137 *Budzinski, Oliver; Gaenssle, Sophia; Lindstädt-Dreusicke, Nadine:* The Batle of YouTube, TV and Netflix – An Empirical Analysis of Competition in Audiovisual Media Markets, April 2020.