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They played the merger game: A retrospective analysis in the UK videogames market

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They Played the Merger Game: A Retrospective Analysis in the UK Videogames Market

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Abstract:

We study the effect of a merger in a dynamic high-technology industry—the videogame market— which is characterized by frequent introduction of new products. To assess the impact of the merger between two large specialist retailers in the UK, we perform a difference-in-differences analysis comparing the price evolution of the merging parties to that of their 7 major competitors on an original sample of 196 videogames belonging to six different consoles. The results of our econometric analyses suggest that there has been a reduction in the general level of prices of both new and pre-owned games after the merger. This decline has been more marked for the merging parties, which suggests that the merger between Game and Gamestation did not lead to a substantial lessening of competition; rather it is consistent with the existence of efficiency gains.

Keywords: Mergers, *Ex-post* Evaluation, Videogames market, Retail sector

JEL Classification: K21, L24, L44, D22, O32

1. Introduction

The increasingly widespread resort to retrospective merger studies is often motivated by the need for antitrust agencies to assess the realized effects of mergers whose approval was controversial.¹ The outcome of such studies is important not only to understand whether the right decision was taken, but also to assess the quality and the completeness of the analysis supporting it in order to inform decision-making in future merger cases.

In this paper we contribute to the growing literature on *ex-post* merger evaluation by analyzing the effects of the merger between two large UK videogame retailers, Game and Gamestation (both chains sold new and pre-owned games), which was approved by the Competition Commission (from here on CC) in January 2008.² This outcome was reached after the Group Chairman exerted her casting vote in a situation where the other 4 members were evenly divided on several aspects of the merger assessment. In particular, two members doubted that the merger would not have anticompetitive effects in the pre-owned segment of the market. This disagreement was mainly based on a different view on the definition of the relevant (both in terms of product and geography) markets.

Indeed, the dynamic nature of high-technology industries, such as the videogame market, poses a challenge to the implementation of competition policy (e.g., Gal and Waller, 2012). Among high-technology industries, the videogame industry is receiving great attention from researchers. Besides the fact that it is an increasingly revenue-generating business,³ the industry's features make it an interesting field of application for both theoretical and empirical research.⁴ On the theoretical side, this industry is a fertile area of study for theories of platform competition (and console pricing in particular⁵) and issues related to vertical relationships (in particular on the role of integration and exclusivity contracts between console platforms and software developers). On the empirical side, this industry provides data

¹ This is for instance the case of a recent retrospective study by Ashenfelter et al. (2013), which analyzes the effects of the Maytag-Whirlpool merger. Other retrospective studies are instead motivated by the need for antitrust agencies to inform their decision-making in key sectors where merger analysis raises issues that are largely industry-specific. An example of such studies is Aguzzoni et al. (2013), which quantifies the effect of a merger in the book retail sector, with a methodology that could be applied to other retailing markets.

² "Game Group PLC and Games Station Limited: A report on the completed acquisition by Game Group PLC of Games Station Limited", 16th of January 2008, pp. 30-31.

³ Lee (2012) reports that 69% of US heads of households engage in computer and videogames. Engelstatter and Ward (2013) report figures for the US whereby sales of videogames have doubled over the last decade and now reach 10 billion dollars annually.

⁴ Lee (2012) provides a nice and comprehensive survey of this literature.

⁵ For instance, Hagiü (2006) studies the interactions between the hardware price and the royalty rates that consoles charge to software developers.

for the estimation of network effects and for the quantification of the role of exclusivity and integration.⁶

Our study of the effects resulting from the merger between Game and Gamestation tries to encompass most of the peculiar features of the videogame industry. Our analysis focuses on the effect of the merger on prices, which are perceived to be the most important purchasing criterion for these products. To evaluate the impact of the merger on the prices of new and pre-owned games, we perform a difference-in-differences (DiD) analysis, in which we take the merging parties as the treatment group and their competitors as the control group, as is common in the literature on *ex-post* assessments (e.g., McCabe, 2002; Ashenfelter and Hosken, 2011).

Because of the dissent between the CC's members at the time of the decision on whether new – also referred to as “mint” – and pre-owned games belonged to the same market, we run separate empirical analyses for these two categories of games. Moreover, to encompass the fundamental role of the relationship between hardware and software in this industry, we also perform heterogeneous treatment effects estimations in order to assess whether the effect of the merger differs depending on the console to which the game belongs. Finally, we also test whether the price effect of the merger differs across retailers.

Overall, the results of our econometric analysis suggest that there has been a reduction in the general price level both for mint and for pre-owned games after the merger. Our results show that this decline has been more marked for the merging parties suggesting that the merger between Game and Gamestation did not lead to a substantial lessening of competition, neither in the mint nor in the pre-owned segment of the market. Hence, we conclude that the CC took the appropriate decision when it approved the merger. The result that the merging parties' prices decreased more than the competitors' prices is consistent with the merger creating efficiency gains. Survey-based evidence, which we obtained by interviewing market participants, suggests that the merger increased the parties' efficiency and, in particular, their ability to obtain better terms from publishers and manufacturers (Aguzzoni et al., 2011).

The paper is organized as follows. In section 2 we describe the characteristics of the videogames industry and the merger. In section 3 we present our empirical methodology for assessing the effect of the merger. Section 4 describes the data. In Section 5 we highlight our main results and describe additional robustness checks. Finally, section 6 concludes.

⁶ See Clements and Ohashi (2005) and Corts and Lederman (2009) on the evaluation of indirect network effects, and Lee (2013) on the impact of integration and exclusivity.

2. The Videogame Industry and the Merger

A videogame is an electronic game for which the player uses a controller (e.g. joystick) to interact with the game in order to generate visual feedback on the screen. Games are played on some sort of platform, generally a PC or a gaming console. The UK videogame market is worth between £2 and £3 billion in 2006, and is the third largest market in the world after the US and Japan.⁷ Although the size of the market had increased significantly before the merger, the sales in this industry have always been highly volatile, since sale patterns tend to follow the release of new consoles, and historically sale cycles have been observed.

Like other creative goods, individual releases of videogames have short lifecycles. Lee (2012, p.6) reports that “typically half of a games lifetime sales occur within the first 3 months of release, and very rarely do games continue to sell well more than half a year from release”. Following the decline in demand over time, prices generally tend to decrease some time after the release date.⁸

Console manufacturers, game developers and publishers sit at the top of the supply chain of videogames. The manufacturers design the consoles and, together with the other two players, create the games. Consoles and games are then sold to retailers and distributors.

At the time of the merger several types of retailers were selling gaming products in the UK: specialist retailers (e.g., Game, Gamestation); non-specialist entertainment retailers, including music and video retailers (e.g., HMV, Blockbuster); high-street general retailers (e.g., Argos, Woolworths), supermarkets, electrical goods retailers (e.g., Currys); and online retailers (e.g., Amazon, Play.com, Internet operations for the bricks and mortar retailers, and online auctions sites).

Retailers typically sell mint videogames, consoles and related accessories. In addition there are also considerable sales of pre-owned products, as consumers tend to re-sell their games and consoles when they grow tired of them, or when they decide to upgrade to a different console. Some of these transactions are carried out privately or through auction sites. Alternatively, consumers go to specialist retailers, who may offer cash or credit against purchases (mostly only for games). This latter option is called trade-in and is the main means for specialist retailers to acquire stocks of pre-owned products.

⁷ “Game Group PLC and Games Station Limited: A report on the completed acquisition by Game Group PLC of Games Station Limited”, January 16, 2008, p. 8.

⁸ Nair (2007) provides an explanation of such pricing strategy that is based on intertemporal price discrimination.

2.1 The Merger

On May 2, 2007 Game acquired Gamestation, one of its main competitors. The UK Office of Fair Trading (OFT) referred the merger to the CC in August 2007. The CC's decision was published on January 18, 2008. Game is a specialist retailer of new and pre-owned videogames, consoles and related accessories. As of January 31, 2007 it had 817 stores around the world; 395 of which were in the UK, all in primary locations, such as shopping centres and high streets. Gamestation is also a specialist retailer of new and pre-owned videogames, consoles and related accessories. Before the merger, it operated 217 stores, solely in the UK. Unlike Game, Gamestation had stores in secondary locations, which were close to prime retail sites, but did not involve the payment of premium rents. According to the parties, the merger would have allowed Game to extend its customer reach. It would have also generated pre-tax synergies, mainly as a result of reduced overheads, improved use of distribution infrastructure, more efficient management of pre-owned product, and improved sourcing. The transaction had also a defensive rationale in view of Game's declining market share in the years preceding the merger.⁹

The preliminary step of the CC's assessment was the definition of the relevant market. The CC concluded that mint and pre-owned products were in the same product market. However, since the evidence was not so clear-cut, the analysis of the possible effects of the mergers was performed also assuming that mint and pre-owned games were two separate markets.¹⁰ The CC also concluded that different types of retailers do not form distinct markets. The CC agreed with the parties' view that in the gaming retail sector there are three different product segments: consoles, software (i.e. games), and peripherals. The CC concluded that each segment included both new and pre-owned products.

As for the geographic market definition, the analysis conducted by the CC provided little evidence in favour of local markets. The scope of local pricing policies proved to be limited. In addition, significant elements of competition occurred at national level, such as

⁹ Generalist retailers had experienced declining market shares in the five years preceding the merger. Instead, supermarkets and internet retailers seem to have increased their market share ("Game Group PLC and Games Station Limited: A report on the completed acquisition by Game Group PLC of Games Station Limited", January 16, 2008, p. 8).

¹⁰ Any decision by the CC whether to approve or block a merger must be approved by a group of five commissioners. In this case two felt that the evidence collected was not sufficient to argue that the prices of mint games constrained the prices of pre-owned ones. The merger was anyway cleared because three commissioners agreed with overall conclusions. Nevertheless we consider this concern in our *ex-post* analysis.

Internet sales by the parties and their competitors as well as advertising campaigns. The CC concluded that the relevant geographic market was national.

The main effect of the merger was to increase concentration in the retail supply of gaming products, by removing one of the two large national gaming specialist retailers as an independent competitor. To assess whether the merger could lead to a price increase in the affected markets, the CC considered whether enough marginal customers would have switched to other providers in order to prevent such rises from being successfully implemented. Hence, it examined the existence of barriers to switching between different retailers, the degree of customers' mobility, and price sensitivity. Given that the product market definition was not clear-cut, the analysis was performed separately for mint and for pre-owned products.

As for mint products, the CC found that many customers viewed Game and Gamestation as the best alternative to each other in this segment. Nonetheless, several considerations led the CC to conclude that there was not much scope for price increases. Customer surveys, run at the time of the inquiry, revealed that many customers bought gaming products from a variety of suppliers, which was consistent with customers switching easily between retailers. These surveys also showed that consumers considered price as the most important factor in their purchasing decisions. These results suggested that consumers would change retailer in response to marginal changes in relative prices. Also, price information was easily available from various sources. For instance, latest releases and chart games were widely advertised. In addition, prices could be checked on gaming discussion websites, in magazines, on the Internet, as well as by visiting supermarkets and high street stores.

With regard to pre-owned products, the parties' market shares were even higher than for mint, and surveys indicated that they were often named as each other's closest competitor. Nevertheless, the CC found that there was not much scope for a price increase for several reasons. First of all, even though fewer retailers offered pre-owned products compared to mint ones, consumers also had other options to the merging parties. Several bricks and mortar retailers (e.g., Blockbuster, independent specialists) and online retailers (e.g., Amazon, Play.com, and eBay) also sold pre-owned products. These were also available at second hand and exchange shops, as well as at car boot sales. Moreover, in the two years prior to the merger, the online sector had developed with online purchases of pre-owned products

expanding. Further, the after-sale services offered by online retailers had improved. Finally, the consumer surveys undertaken during the inquiry showed that consumers were responsive to relative price changes and switched easily between retailers.

The CC also considered whether there were barriers to entry and expansion that could allow the merger to create unilateral effects on competition. With regard to mint products, the CC concluded that neither the barriers to entry, nor the barriers to expansion were high. With regard to pre-owned and trade-in business, the CC concluded that mint products exerted a constraint on the retail prices for pre-owned games, in virtue of their substitutability. As a result, even if entry in the pre-owned segment was unlikely, ease of entry/expansion in the mint segment would act as a constraint also on the prices for pre-owned products.

Finally, the CC analysed whether the merger was likely to increase the parties' buyer power to the detriment of competitors. It concluded that the increased size of the merged entity allowed it to negotiate better terms, but that the discount rates it was expected to achieve were unlikely to reduce the rivals' ability to compete. In addition, these expected reductions in cost could be passed on to consumers. With regard to suppliers, manufacturers are generally large multinational corporations selling all over the world, for which the UK accounts only for a fraction of their sales. The CC considered that this constrained the parties' buyer power. Moreover, the CC did not expect the merger to cause negative effects on investment and innovation by suppliers since very little product development is UK-specific. The same considerations, albeit to a lesser extent, were also made for software publishers, which also tend to be large international firms.

The CC concluded that the merger was not expected to result in a substantial lessening of competition in the markets for the supply of gaming software, consoles and peripherals to consumers in the UK.

3. The Empirical strategy

Our analysis aims at evaluating the effects of the Game/Gamestation merger on the retail market for gaming products in the UK. Since the CC mainly focused on the market for mint and pre-owned software, we also concentrate on this market.¹¹ In addition, as previously

¹¹ This is probably due to the fact that the margins on hardware (i.e. consoles) seem to be narrower and competition fiercer than for software. Indeed, most of the CC's analysis concerned the likely effect of the merger on the software segment (and in particular on pre-owned games).

mentioned, given the disagreements within the CC with regard to whether mint and pre-owned games belonged to the same market, we run separate empirical analyses for mint and pre-owned games.

The key variable in our empirical study is the price at which these games are sold, which is the main factor consumers consider when making their purchasing decisions. To assess the impact of the merger, we perform a DiD analysis with the merging parties as the treatment group and their competitors as the control group. This identification strategy is widely used in retrospective studies where alternative control groups are not available because, for instance, competition is national in scope and one cannot exploit variations in local market conditions.¹² The main advantage of using this control group is that it enables one to separate the effects of the merger from any factors affecting demand or costs that are common to all firms in the market. As Ashenfelter et al. (2013) thoroughly discuss, if the merging parties raise their prices after the merger and prices are strategic complements, their rivals shall react by increasing their own prices as well in the post-merger equilibrium. This effect takes place under a variety of market conditions and, in particular in the differentiated product Bertrand model. Moreover, for a large class of demand systems, Deneckere and Davidson (1985) show that the merging firms change their prices after the merger by a greater amount than their rivals, which delivers the identification of the merger effect.¹³

Yet, using the competitors as a control group has its own disadvantages as the competitors' prices may also be affected by the merger and, therefore, they may not fully reflect the counterfactual scenario that would have occurred absent the merger. Hence, our identification strategy does not allow for estimating the full causal effects of the merger, but rather it only enables the identification of the direction of its competitive effect. The merger might be seen as market power enhancing if the prices of the merging parties increase more than those of their competitors, while it might be seen as efficiency enhancing if the merging parties' prices decrease more than those of their competitors.

In our main model, we estimate the change in prices on a set of games using observations from the pre-merger and the post-merger period. Therefore the general equation that we estimate is:

¹² Ashenfelter and Hosken (2011) employ a similar control group to analyse the price effects of five mergers, and McCabe (2002) employs it to study the price effects of mergers in the market for academic journals.

¹³ In this model, the extent to which rivals increase their prices depends on how quickly demand elasticities increase with prices (see Crooke et al, 2003).

$$Price_{ijnt} = \alpha_j + \mu_n + \beta \cdot post_t + \delta \cdot merged_j \times post_t + \gamma \cdot X_i + \varepsilon_{ijnt} \quad (1)$$

where $Price_{ijnt}$ is the price of game i charged by retailer j for console n ¹⁴ at time t , α_j and μ_n represent respectively a retailer and a console fixed-effect,¹⁵ $post_t$ is a dummy equal to 1 for the games observed in the post-merger period and 0 before, while $merged_j$ is a dummy equal to 1 for the merging parties and 0 for the others, X_i is a set of control variables based on the characteristics of the games (see subsection 4.1 for a description of the control variables used in the specification), and ε_{ijnt} is the error term, which we assume to be correlated among games within the same console as customers are often segmented between different console. The interaction between the variables $merged_j$ and $post_t$ takes the value 1 for the games sold by the merging parties in the post-merger period and 0 otherwise.

We estimate this equation separately for mint and for pre-owned products. Hence, $Price_{ijnt}$ can either refer to the prices of mint games or of pre-owned ones. Our key parameter of interest is the interaction coefficient δ , which quantifies the additional variation experienced by the prices of the two merging parties after the merger with respect to the average price change of their competitors across all retailers. The average price change in the market after the merger is captured by the coefficient β .

Besides estimating the average effect of the merger on prices, we also assess whether the merger's effect differs along relevant dimensions of heterogeneity in the product characteristics. First, since the console (hardware) is the platform on which games (software) can be played, the console market and the market for games are linked by indirect network effects.¹⁶ Therefore, we consider it appropriate to evaluate whether the merger produced different price effects depending on the consoles. Subsection 5.2 presents the results of the heterogeneous treatment effects estimation by console, in which we verify whether the price changes show a different pattern across consoles (i.e., we estimate a different coefficient β_n for each console) and whether the additional variation experienced by the prices of the two

¹⁴ A game is identified both by the title and the console. For example, FIFA 10 for Xbox and FIFA10 for PS3 are two different games.

¹⁵ We run a regression with fixed-effects for each retailer and each console, so as to capture all the time-invariant retailer-specific and console-specific (unobserved and observed) characteristics that may affect prices.

¹⁶ Indirect network effects arise because consumer valuation for a console indirectly depends on the number of other players using the same console, since the larger the customer base, the larger the variety of games that are likely to be developed for that platform.

merging parties differs across consoles (i.e., we estimate a different interaction coefficient δ_n for each console).

Second, since there are different categories of retailers in this market (specialist, non-specialist, online, etc.), we assess whether the price changes varied across retailers and use this information to estimate heterogeneous treatment effects. This analysis allows us to assess whether the effect of the merger differs by category of retailers (e.g., specialist vs. online) and whether the two merging parties reacted differently to the merger. As a first step, we estimate the price change before and after the merger for each retailer separately. This entails estimating a new regression with a different coefficient β_j for each retailer. These effects represent the retailer-specific price change after the merger if compared to the average market price before the merger. As a second step, we take the difference between each of these coefficients β_j and the coefficient estimate for Games and Gamestation. These essentially represent different DiD estimators and they allow us to identify two heterogeneous treatment effects: $(\beta_j - \beta_{Games})$ and $(\beta_j - \beta_{Gamestation})$.

4. Data and Sample Selection

To perform our analysis, we put together a dataset that provides two comparable snapshots of the prices of the merging parties and their main competitors before and after the merger. As discussed in section 2, videogames, like other creative goods, become obsolete very quickly, and the price that consumers are willing to pay for a specific title quickly decreases. This implies that it is inappropriate to track the exact same titles before and after the merger to assess its causal effect on prices, because the same titles over time are different products from the point of view of the consumers. For this reason, rather than using the same titles before and after the merger, we compare the prices of different videogames with very similar characteristics. Any difference in these characteristics can be controlled for by using a hedonic price approach, in which prices are expressed as a function of the characteristics of the videogames that we believe have an impact on prices.¹⁷

Since we could not find data on both mint and pre-owned prices from any commercial sources for the pre-merger period, we rely on the information collected by the CC. Hence, we use a set of price data submitted by the merging parties during the inquiry, which the CC employed for the definition of the relevant product market. This set contains information on

¹⁷ Ashenfelter et al. (2013) and Aguzzoni et al. (2013) adopt the same methodology for the appliance market and for the book market respectively.

the mint and pre-owned prices charged by nine UK retailers between August and October 2007 on 196 titles. The 196 titles belong to six different consoles.¹⁸

The main issue with this sample of pre-merger videogame titles is that we do not know how they were originally selected. Yet, since we know that the data were provided by Game, we assume that the pre-merger titles reflected Game's most relevant sales (i.e. best-selling titles) across the various consoles. Hence, for the post-merger period we select a new set of titles on the basis of Game's best-selling charts.¹⁹ For each console, we select the same number of games as in the pre-merger dataset. The only exceptions are the games for PS2 and PS3 consoles, for which we invert the number of titles selected. This choice hinges on a number of considerations. First, at the time of the merger PS3 had just been released²⁰ and, consequently, a lower range of titles was available in comparison to its predecessor. In the post-merger period, the situation is reversed, since there are more titles available for the PS3 console than for the PS2 one. Second, the PS3 console is designed to be retro-compatible with PS2 games, thus making it more likely for players to switch to the new console as they would still be able to play their old PS2 games.

We notice that the share of games bundled with an accessory is higher in the post-merger set of titles than in the pre-merger one, particularly for the Nintendo Wii. Given that a bundle is more expensive than a standalone game, we also record the price of the standalone game, when it is possible to find it. This allows us to adjust for any possible distortions to the level of the prices caused by the higher number of bundles. Consequently, the final post-merger sample includes 6 more games, 202 in total (as the same title sold in a bundled or standalone counts as two games).²¹

We then collected the prices for the mint and the pre-owned versions of these titles across the same retailers that were included in original dataset (Amazon, ASDA, CeX, eBay,

¹⁸ These 196 titles are distributed as follows: 33 titles are for Xbox 360, 23 for Wii, 31 for DS, 21 for PlayStation 3 ("PS3"), 64 for PlayStation 2 ("PS2") and 24 for PlayStation Portable ("PSP").

¹⁹ More precisely, we employ the charts published on Game's website on May 10, 2010. In Appendix 1 we report the full list of titles that we use in our analysis.

²⁰ PS3 was released on March 23, 2007.

²¹ These 202 titles are distributed as follows: 33 titles for Xbox 360, 26 for Wii, 31 for DS, 66 for PlayStation 3, 21 for PlayStation 2 and 25 for PlayStation Portable. All titles included in the dataset are listed in the appendix.

Game, Gamestation,²² HMV, Play.com and Tesco). The price data were collected through these retailers' websites.²³

Not all retailers sell both mint and pre-owned games. Hence, for Game, Gamestation and Play.com we could obtain data both on mint and pre-owned prices, while for CeX only on pre-owned prices, and for ASDA, Tesco and HMV only on mint prices. Amazon UK sells mint games both directly and as a platform connecting buyers and sellers (Amazon Marketplace), while it offers pre-owned titles only as a platform. We have only recorded Amazon's mint price (only if it did not offer the title, we included the cheapest price on offer through Amazon Marketplace) and the cheapest pre-owned price for the game in *used like new* condition offered on Amazon Marketplace. With respect to eBay, even though it offers both mint and pre-owned games, for each title we only included the price for *the cheapest item in sealed mint condition available now and sold by a UK seller* since pre-owned prices were not recorded in the pre-merger dataset. When buyers were charged for the delivery of the game, which happens rarely, we have added the delivery charge to the price to generate our *Price* variables.²⁴

To minimize any potential bias due to the sample selection, we check whether the results of our analysis are not sensitive to the way in which we have built the post-merger sample. For this reason, we test the robustness of our main results by performing a set of additional regressions using some alternative samples of titles, which are described in detail in section 5.4. Our results appear to be robust to these sample selection issues.

4.1. The Control Variables

We include in our dataset a large set of game-specific control variables, which include information on: time elapsed from release, degree of vertical integration in the supply chain, identity of developer and publisher, genre, possibility of online playing, whether the game is

²² Game and Gamestation kept distinct branding after the merger.

²³ We acknowledge that in some cases retailers charge prices for on-line sales different from prices charged for in-store sales. However, we run some random checks by calling shops and were told that on average prices in shops are the same as on the website.

²⁴ Game, Gamestation, Play.com, ASDA, Tesco, HMV and CeX do not apply any charge for delivery to their online customers. Amazon UK does not charge delivery for the games it sells directly whilst those sold through Amazon Marketplace may require the payment of shipment costs. Similarly, products sold on eBay may involve the payment of a delivery charge.

bundled with accessories, press rating, and whether the game is part of a series or family of games.²⁵

The decision on which variables to include as controls is based on the findings of the empirical literature on this industry, as well as on our consideration on what appeared to be relevant features of the games that affect demand and supply, hence that are likely to impact prices. For instance, Nair (2007) and Hernandez-Mireles et al. (2008) indicate the age of a game as a key variable in determining the pattern of its price over time. Hence, we build a variable (*days release*) that displays the age of each game in terms of the number of days elapsed from its release up to the day in which its price is registered. For the pre-merger sample we calculate the age of each title from its release up to October 31, 2007, whilst for the post-merger sample we calculate the age of each game from its release up to May 20, 2010.

Several papers outline the impact of the degree of vertical integration between developers, publishers and consoles on the prices of games. For instance, Gil and Warzynski (2009) find evidence of higher prices for integrated games, because of better release periods and improved post-release marketing strategies. Therefore, for each title in our datasets, we collect information on the identity of the developer, the publisher, and the console manufacturer. We then control for different degrees of vertical integration by introducing two dummies (*IntPubDev* and *IntPubDevMan*): the former reveals if the publisher of the game is also its developer, while the latter tells if the publisher coincides with both the developer and the console manufacturer.

In order to control for quality differences among producers and developers that might affect prices, we introduce a set of dummy variables for the 10 publishers and the 11 developers that appear frequently in the sample.²⁶

To be consistent with the existing literature, we also include the genre of each game as a control variable (e.g., Hernandez-Mireles et al. 2008). For simplicity, we aggregate all titles into seven categories: 1) action, 2) simulation, 3) sports, 4) adventure, 5) shooter, 6) interactive, and 7) role play games (RPG). This aggregation is done following two criteria.

²⁵ All the information used to build the control variables is taken from IGN Entertainment UK and from Game's website.

²⁶ We do not include a full set of dummies for all developers and publishers since they would be too many. For most of them, the limited number of observations would not allow us to consistently estimate the fixed-effects. For this reason, we choose to include a dummy only for the top 10 publishers and developers. Due to a tie, the number of dummies for the developers is actually 11.

First, we calculate the frequency of different types of games in the sample, considering the categorization indicated on the game itself. Then, where possible because of common characteristics, we group the least frequent genres into wider categories. We then introduce in the regression a set of seven dummies, each referring to one of these categories.

Another distinct feature of some games is that they allow the user to play them remotely with other users. This feature enhances the value of the game. We collected information on whether the games included in our samples has this characteristic and create a variable (*online*), which equals 1 if online gaming is possible and 0 if not.

We consider if a game is sold with an accessory, through the variable (*bundle*). This is equal to 1 if the game is bundled with an accessory and 0 if not. We also account for the rating given to a game by newspapers and specialist magazines at the time of its release because this is likely to affect the valuation of consumers. To this end we introduce the variable (*press*), which ranges from 0 to 10 (worst to best). Further, we control for whether a game is part of a series/saga or not, as the pricing of these games may follow different dynamics. In particular, it may reflect the fact that buyers of these games are more captive and, therefore, they tend to attribute a higher value to them. The variable (*PartofSeries*) equals 1 when a game is part of a series/saga and 0 otherwise.²⁷

In Table 1 we present the descriptive statistics for the quantitative variables employed in the estimation separately for the two sub-samples of pre-merger and post-merger games.

[Table 1 about here]

Pre-merger, the average price for mint games, once adjusted for inflation, is £26.80, while for pre-owned games is £22.14. Post-merger, these drop to £23.30 and £17.31, respectively. This first descriptive result of this study is therefore that there was a substantial average price reduction after the merger. The average number of days elapsing between the release of the game and the recording of the price data is 285 for the pre-merger titles and 326 for the post-merger titles. As far as vertical integration is concerned, 42% of the games are from the same publisher and developer, while for only 8% of the games there is full integration between publisher, developer and manufacturer pre-merger. The figures post-merger are similar: 38% and 10%, respectively. Pre-merger, 22% of the games included in the study allow online playing while post-merger this holds for 24% of the games. Pre-merger 4%

²⁷ The variable *PartofSeries* tries to capture an attribute that may give a different value to a game. It is important to stress that this variable takes value 1 for all games belonging to a series, regardless of whether they are present in both the pre-merger and the post-merger sample or not.

and post-merger 6% of the games are bundled with accessories. Pre-merger, 78% of the games are part of a series/saga and this figure drops to 71% post-merger. Finally, the average press rating for the games in the estimation sample is 6.90 pre-merger and 7.47 post-merger.

5. Results

In this section we present the main findings of our econometric analysis. We illustrate the results of the DiD analysis for mint and for pre-owned games separately. We also present the results by retailer and by console, to more clearly assess the heterogeneity of the pre-post price change across retailer chains or across consoles.

5.1. Difference-in-Differences Analysis

In Table 2 we present the results of the DiD analysis, based on equation (1) above. We run separate regressions for mint and pre-owned games. The fact that customers are segmented between different console-users generates a potential covariance between disturbances in the prices of different games for the same console. Thus, we cluster the errors at the console level.

[Table 2 about here]

The results presented in column (1) show that the average reduction in prices for mint games is significantly more marked for Game and Gamestation than for the other retailers. In particular, the estimates suggest an average reduction of £3.58, with an additional reduction of £5.05 for the merging parties. Similarly, the results for pre-owned games show that the reduction in prices in the post-merger period was more marked for Game and Gamestation than for the other sellers of pre-owned titles. Indeed, the estimates suggest an average decrease of £4.66, with an extra reduction of £4.52 for the merging parties (the average pre-merger price was £23.40).²⁸

The control variables included in the regression are mostly significant and have the expected signs. In particular the average price of a game is higher if the game is part of a series, if its press rating at time of release was high, if it is bundled with an accessory and if it allows on-line gaming. On the other hand, the longer the time that elapsed since the release of a game, the lower its price. The integration between publishers and developers appears to have a negative effect on prices, while complete vertical integration (i.e. also with the

²⁸ The significance of these results is confirmed when we cluster the errors at the retailer level.

manufacturers) produces a positive effect on prices, yet both coefficients are not statistically significant at standard confidence levels.²⁹

Overall, the results presented in Table 2 show a reduction in prices both for mint and pre-owned games. This reduction is significantly more pronounced for the merging parties, which suggests that the merger did not produce any negative effects on consumer welfare, at least in terms of prices. Following Deneckere and Davidson (1985), we can conclude that the fact that the merging parties reduce prices *more* than their competitors suggests that the merger brought efficiency gains to the merging parties. Indeed, if the efficiency gains are large enough to compensate for the market power effect, the merged firm may have an incentive to reduce prices.³⁰ In a model where firms compete *à la* Bertrand, the rivals react by decreasing prices too, since they are strategic complements, but by a lower amount than the merged firm. The post-merger equilibrium predicted by this merger model with large enough efficiency gains is one in which (1) prices are lower than in the pre-merger situation; and (2) the merged firms' prices are lower than those of their competitors.

In this specific case, we do not have enough information to quantitatively assess the magnitude of the potential efficiency gains. The parties claimed that the merger would have generated synergies, but in the decision there was no evaluation of the possible efficiency gains brought about by the merger. There was only a reference to possible cost savings due to increased buyer power: "*the parties would be able to negotiate much better buying terms than competitors, which would give them a marked cost advantage allowing them to undercut competitors (...)*" (par. 7.98 of the CC decision), even though the likelihood of this effect was not clear-cut. Evidence from a survey of market participants that we run some years after the merger suggests that the merger might have increased the parties' ability to obtain better conditions from publishers and manufacturers, as well as their overall efficiency.³¹

We now turn to a more detailed analysis of the data. In particular, we examine more closely the price reduction spurred by the merger, by looking at the price evolution by console and for each retailer.

²⁹ In the specifications with errors clustered at the retailer level or at the retailer-console level, the coefficient representing the effect on prices of the integration between publishers and developers becomes significant at the 5% level, which might suggest the existence of efficiencies from vertical integration that are passed on to final consumers.

³⁰ See Motta (2004), chapter 4.

³¹ See Aguzzoni et al. (2011, section 6.3.3) for further details.

5.2. Heterogeneous Treatment Effects by Console

Table 3 presents the results of the analysis by console, in which we verify whether the reduction in prices shows a different pattern across consoles (column (1) and column (2)) and whether the additional variation experienced by the prices of the two merging parties differs across consoles (column (3) and column (4)).

[Table 3 about here]

Two interesting features emerge from our findings. The first is that there is a clear dividing line between the pattern of games' prices for portable and non-portable consoles, as the latter exhibit a stronger decline compared to the former (Nintendo DS and PlayStation Portable) for the average retailer.³² The second feature is that the more limited price reduction for PlayStation 2 among the non-portable consoles, whose market share was dramatically shrinking during the relevant period.

The results for the interaction coefficients, which capture the change in the merging parties' prices relative to those of the other retailers, i.e. the heterogeneous treatment effect, suggest that the reduction in prices is significantly higher for the merging parties across all consoles. The additional mint price reduction for the merging parties ranges from £2.46 for PlayStation Portable to £7.11 for the PlayStation 3, while the additional pre-owned price reduction for the merging parties ranges from £1.68 for PSP to £9.49 for the Xbox. Moreover, the observed decline in mint games' prices for two consoles, PlayStation 2 and Nintendo DS, seems to be entirely driven by the pricing behaviour of Game and Gamestation.

5.3. Heterogeneous Treatment Effects by Retailer

Table 4 presents the results based on the specifications in which we estimate the effect on prices before and after the merger separately for each retailer.³³ Columns (1) and (4) report these estimates for mint games and pre-owned games respectively. We then use these estimates to perform two DiD analyses by comparing the coefficients estimates, i.e. the post-merger price change, of each of the competitor retailers with the coefficients estimates of

³² The average mint and pre-owned prices for Nintendo DS are £23.70 and £19.60 respectively, while the average mint and pre-owned prices for all other consoles are £27.40 and £22.60 respectively. Given the coefficient estimates and these average prices, both the absolute and the percentage post-merger price variation for Nintendo DS are always smaller than for all other consoles.

³³ To simplify the table we only included the coefficients measuring the post-merger effect for each retailer, while omitting the coefficients for the control variables. They are in line with the findings described in the basic DiD regressions reported in Table 2. Furthermore, we did not have enough information on prices for both mint and pre-owned games for all retailers and, therefore, we could not estimate some of the interaction coefficients.

Game and Gamestation, respectively. Columns (2) and (3) report the results for mint games while columns (5) and (6) report the results for pre-owned games.

For mint games, we first observe that the estimated coefficient sign is negative for each post-merger-retailer interaction, which means that all retailers experienced a price reduction after the merger. However, the coefficients for E-bay, Play.com, and Tesco are not significant, while the most significant reduction is experienced by the merging parties and is slightly higher for Gamestation. This latter result is then reflected in the findings of the DiD estimates reported in columns (2) and (3). The post-merger price reduction by Games and Gamestation is significantly larger if compared to the price reduction of ASDA (£4.58 and £5.82, respectively), E-bay (£6.28 and £7.52, respectively), Play.com (£6.79 and £8.03, respectively), and Tesco (£6.53 and £7.77, respectively). The difference of the price change between Game and Gamestation is, instead, not significant.³⁴

[Table 4 about here]

When we look at the pre-owned games, we observe a very similar picture. Again, the sign of the coefficient estimate for the retailer-specific post-merger interaction is significantly negative for all retailers (column (4)). The most significant reduction is estimated for Game and Gamestation, and again the difference between the two coefficients' estimates is not significant. The price reduction for the merging party is, however, significantly larger than for Amazon (£4.20 and £4.10 respectively), CeX (£5.21 and £5.10 respectively), and Play.com (£4.17 and £4.07 respectively).

5.4. Robustness Checks

Since we could not verify how exactly the pre-merger titles were selected, we check whether the results of the econometric analysis may be driven by a potential selection bias. To do so, we build a number of alternative post-merger datasets based on a different selection of titles, and we re-run all regressions on these alternative sets. Below we describe these alternative samples of titles.

A first source of potential bias could derive from the fact that the post-merger sample is based on the same consoles' market shares (in terms of software sales) of the pre-merger sample, the only difference being the inversion between the numbers of titles for PS2 and PS3. For this reason, we construct another sample in which the number of titles per console

³⁴ We also tried to use the average effect between Game and Gamestation as a counterfactual. Given that the coefficients estimates are very similar, the qualitative results reported in columns (2) and (3) do not change.

reflects their market shares, in terms of software sales, as reported in the Entertainment Retailers Association's 2010 yearbook.³⁵ Of course, the sample size is different from the original one.

It is also possible that the pre-merger titles were representative of the consoles' market shares in terms of Game's software sales, and not of aggregate sales. Hence, we construct another sample in which the post-merger titles are selected reflecting the distribution of the consoles market shares relative to Game's sales.³⁶ For the pre-merger data, we keep the original distribution, but we reduce the number of titles in order to have the same number of titles pre and post-merger.³⁷

A third potential source of selection bias might be that the pre-merger titles reflect the overall top-selling titles and not only Game's best-selling list. In order to account for this possibility, we build an additional sample in which, out of the selected post-merger titles, we keep only those titles that appear in ELSPA's best-selling chart for the week 10-17 of May 2010.³⁸ About half of the titles originally selected are also in this chart.³⁹

A further potential problem might be related to the fact that the post-merger data contains a relatively higher number of bundles, which are more expensive. This is mainly due to the fact that the console Nintendo Wii, for which bundles are more frequent, increased its sales over time. For this reason, we construct a sub-sample in which we exclude all titles that were bundled with accessories both from the pre and post-merger sets.

Finally, we also select an additional sample in which we include only those titles that belong to a series. Since the number of titles that satisfy these criteria is small, we adopt a broader definition of series and treat those titles that are different episodes of a given saga as belonging to the same series.⁴⁰ The underlying idea of this robustness check is to create a sample of titles pre- and post- merger as homogenous as possible.

³⁵ We use the 2009 market shares for the selection of the post-merger titles, as these were the most recent available. In addition, for the sake of uniformity we adjust both the pre-merger and the post-merger sample using the Entertainment Retailers Association's 2010 yearbook data on market shares.

³⁶ The distribution of the consoles market shares relative to Game's sales as of May 10, 2010.

³⁷ Contrary to the previous case, we cannot apply the correction both to the pre-merger and the post-merger samples, because we do not have data on Game's software sales before the merger.

³⁸ ELSPA is the UK Entertainment and Leisure Software Publishers' Association, which was established in 1989 by videogame software publishers. This is now known as the UKIE, the UK Interactive Entertainment Association.

³⁹ In this case, we also cannot apply the correction to both the pre-merger and the post-merger samples, because we do not have the data for the pre-merger period.

⁴⁰ FIFA is a good example of a series. The game is basically the same in the various versions, as only the name of the players and some features change. Harry Potter is a saga because the adventures change in each episode, and so does the game, but some of the features, e.g., the characters, remain the same.

In Table 5 we present the results of these robustness checks for the prices of mint games.

[Table 5 about here]

Column (1) shows the results when the number of titles per console in the post-merger sample reflects the consoles' market shares in terms of aggregate software sales in 2009, rather the same shares as in the pre-merger sample. The results obtained are not different in qualitative terms. As before, the estimated coefficients show a significant decline in prices in the post-merger period, which is stronger for the merging parties. In terms of magnitude of the estimated coefficients, if we compare the results in column (1) of Table 5 with those in column (1) of Table 2, we find that the estimate of the interaction effect with the revised sample of titles is slightly lower.

Column (2) presents the results obtained when we used a sample in which the post-merger data reflect the distribution of the consoles market shares for Game's sales. The results are substantially unchanged.

In column (3) we show the results when the two samples of titles include only those that appear in the ELSPA general best-selling chart. These too show a significant reduction in prices, which is stronger for the merging parties. In column (4) we present the results when the estimation is done on samples that exclude all games sold in bundles. The results confirm that there is a decrease in price after the merger, which is significantly stronger for Game and Gamestation.

Finally, in column (5), we present the results when we estimated our model using two samples that are as homogeneous as possible, i.e. they only include titles that belong to a series. The results still indicate a sharp reduction in the prices of the merging parties (shown by the interaction coefficient), but the average industry prices exhibit a very small decline and the coefficient is not significant. This might be consistent with the view that buyers of games belonging to a series are more captive and less price-sensitive and, therefore, the prices of these games are reduced by less after the merger.

Table 6 shows the results of the same robustness checks on pre-owned games. The five different sub-samples are built accordingly to the logic discussed above. All results are in line with those obtained for mint games: both the post-merger coefficient and the interaction term, which captures the effect for the merging parties, are still negative and significant.

[Table 6 about here]

Although the results obtained using these alternative samples give us confidence in the robustness of the main results, we performed a further check to verify whether the titles included in the sample have a role in driving the results. We ran 1000 regressions on 1000 different samples, constructed by randomly excluding 20 pre-merger and 20 post-merger titles from the two original samples each time. For both mint (Figure 1) and pre-owned games (Figure 2), the results of these regressions show that the estimated coefficients for the post-merger and interaction effects are always negative and all the estimated coefficients are significantly different from zero. These findings confirm that the decline in the merging parties' prices for both types of games is not driven by the way in which the titles in the sample were selected.

[Figure 1 about here]

[Figure 2 about here]

6. Conclusions

We study the effect of a merger in a dynamic high-tech industry with rapidly changing technology –the videogame market– which is characterized by frequent introduction of new products. Moreover, because of its two-sided nature, this industry displays strong network effects linking the hardware market (i.e. the console platforms) and the software market (i.e. the videogames). It is therefore crucial to use a methodology that takes into account the specific features of this market to correctly assess the impact of the merger. Besides the peculiarities of the industry under consideration, the interest of our case study from a competition policy viewpoint lies on the fact that the decision on this merger was a tight one.

Overall, the results of our econometric analyses suggest that, since the merger took place, there has been a reduction in the general level of prices of both mint and pre-owned games. This decline has been more marked for the merging parties, which suggests that the merger between Game and Gamestation did not lead to a substantial lessening of competition, neither in the mint nor in the pre-owned segment of the market.

The result that the merging parties' prices decreased more than the competitors' prices is consistent with the merger creating efficiencies. In a market where prices are the firms' main strategic variable, it is indeed plausible that average prices would decline if synergies are realized, and that the merging parties would reduce their prices more than their rivals. Given the lack of data, it was not possible to confirm whether merger-specific efficiency

gains could explain the observed trend in the prices. However, anecdotal evidence that we have obtained from market participants suggests that the merger has increased the parties' efficiency and, in particular, their ability to obtain better terms from publishers and manufacturers.

References

- Aguzzoni L., E. Argentesi, P. Buccirossi, L. Ciari, T. Duso, M. Tognoni, and C. Vitale, 2011, “The Ex post Evaluation of Two Merger Decisions”, a report prepared the UK Competition Commission.
- Aguzzoni L., E. Argentesi, L. Ciari, T. Duso, and M. Tognoni, 2013, “Ex-post Merger Evaluation in the UK Retail Market for Books”, DIW Berlin Discussion Papers 1310, available at SSRN: <http://ssrn.com/abstract=2283053>.
- Ashenfelter O. and D. Hosken, 2011, “The Effect of Mergers on Consumer Prices: Evidence on Five Mergers on the Enforcement Margin”, *Journal of Law and Economics*, 53 (3): 417-466.
- Ashenfelter O., D. Hosken and M. Weinberg, 2013, “The Price Effects of a Large Merger of Manufacturers: A Case Study of Maytag-Whirlpool”, *American Economic Journal: Economic Policy*, 5 (1): 239-61.
- Buccirossi P., L. Ciari, T. Duso, G. Spagnolo and C. Vitale, 2006, “The Ex-Post Assessment of Merger Control Decisions – a Study for the European Commission prepared by Lear”.
- Clements M.T. and H. Ohashi, 2005, “Indirect Network Effects and the Product Cycle: Video Games in the U.S., 1994-2002”, *Journal of Industrial Economics*, Vol. 53, n. 4, 515-542.
- Corts K. S. and M. Lederman, 2009, “Software exclusivity and the scope of indirect network effects in the U.S. home videogame market”, *International Journal of Industrial Organization*, 27 (2): 121-136.
- Deneckere R. and C. Davidson, 1985, “Incentives to form coalitions with Bertrand competition”, *Rand Journal of Economics*, 16 (4): 473-486.
- Duso T., 2012, “A Decade of Ex-post Merger Policy Evaluations: A Progress Report,” in Dan Sjöblom Ed., *More Pros and Cons of Merger Control*, Stockholm: Swedish Competition Authority, 125-187.
- Engelstatter B. and M.R. Ward, 2013, “Video Game Niches: Specialization, Substitutability and strategic Entry”, mimeo.
- Focarelli D. and F. Panetta, 2003, “Are Mergers Beneficial to Consumers? Evidence from the Market for Bank Deposits”, *American Economic Review*, 93 (4): 1152-1172.
- Friberg R. and A. Romahn, 2012, “Ex-Post Merger Review and Divestitures”, mimeo, Stockholm School of Economics.

- Hernandez-Mireles C., D. Fok, and P.H. Franses, 2008, “Why, How and When Do Prices Land? Evidence from the Videogame Industry”, ERIM report series.
- Gal M.S. and S. W. Waller, 2012, “Antitrust in High-Technology Industries: A Symposium Introduction”, *Journal of Competition Law & Economics*, 8 (3): 449-457.
- Gil R. and F. Warzynski, 2009, “Vertical Integration, Exclusivity and Game Sales Performance in the U.S. Video Game Industry”, MPRA Paper 21049, University Library of Munich, Germany.
- Hagiu A., 2006, “Pricing and Commitment by Two-Sided Platforms”, *RAND Journal of Economics*, 37 (3): 720-737.
- Hunter G., G.K. Leonard, and S. Olley, 2008, “Merger Retrospective Studies: A Review”, *Antitrust*, 23 (1): 34–41.
- Lee R., 2012, “Home Videogame Platforms”, in Peitz M. and J. Waldfogel eds., *The Oxford Handbook of the Digital Economy*, Oxford University Press.
- Lee R., 2013, “Vertical Integration and Exclusivity in Platform and Two-Sided Markets”, Forthcoming, *American Economic Review*.
- McCabe M., 2002, “Journal Pricing and Mergers: A Portfolio Approach”, *American Economic Review*, 92 (1): 259-269.
- Nair H., 2007, “Intertemporal price discrimination with forward-looking consumers: Application to the US market for console video-games”, *Quantitative Marketing and Economics*, 5, 239-292.
- Nevo A. and M.D. Whinston, 2010, “Taking the Dogma out of Econometrics: Structural Modeling and Credible Inference”, *Journal of Economic Perspectives*, 24 (2): 69-82.
- Pakes A., 2003, “A Reconsideration Of Hedonic Price Indexes With An Application To PC's”, *American Economic Review*, 93 (5): 1578-1614.
- Skrainka B. S., 2012, “The Geography of Grocery Demand in the UK: An Evaluation of the 2003 Morrisons-Safeway Merger”, mimeo, University of Chicago.
- Weinberg M., 2008, “The Price Effects of Horizontal Mergers”, *Journal of Competition Law and Economics*, 4 (2): 433-447.

Figures and Tables

Figure 1: Estimated Coefficients and t-values for the Post-merger (a) and for the Interaction (b) Effects: Mint Products

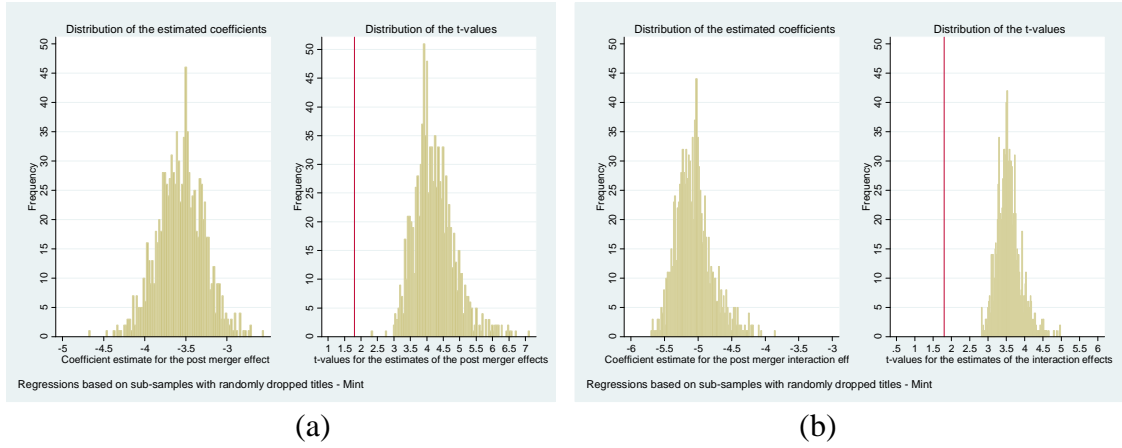


Figure 2: Estimated Coefficients and t-values for the Post-merger (a) and for the Interaction (b) Effects: Pre-owned Products

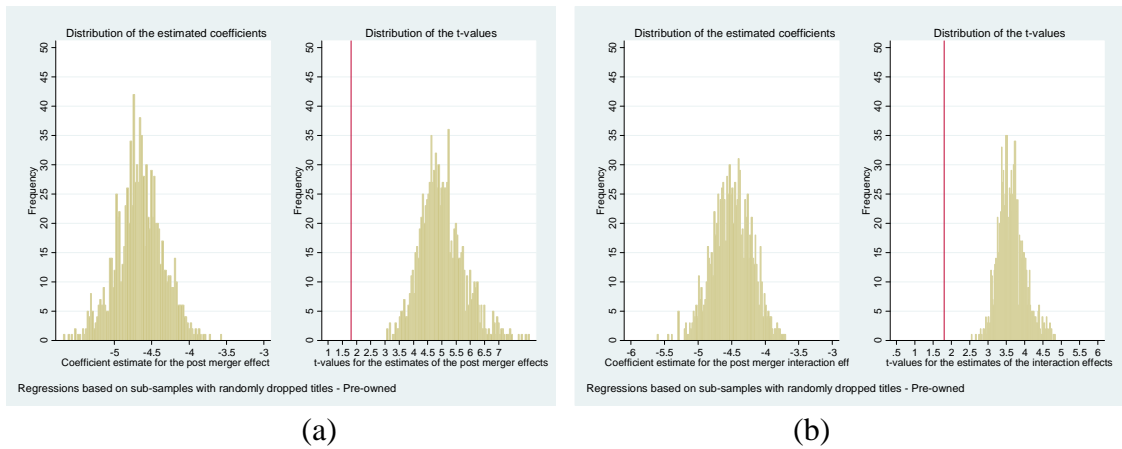


Table 1: Descriptive Statistics

Variable	Pre-Merger					Post-Merger				
	Obs.	Mean	S.D.	Min	Max	Obs.	Mean	S.D.	Min	Max
price mint*	1254	26.80	10.62	0.99	69.99	1141	23.30	13.53	3.71	129.91
price pre-owned*	657	23.39	9.20	3.99	64.99	388	17.31	11.06	2.98	110
days release	1254	285.38	240.63	1	1955	1141	326.83	342.43	13	1648
IntPubDev	1254	0.42	0.49	0	1	1141	0.38	0.49	0	1
IntPubDevMan	1254	0.08	0.27	0	1	1141	0.10	0.30	0	1
online	1254	0.22	0.41	0	1	1141	0.24	0.43	0	1
bundle	1254	0.02	0.13	0	1	1141	0.06	0.25	0	1
part of series	1254	0.78	0.42	0	1	1141	0.71	0.46	0	1
press	1254	6.90	1.48	1.5	9.5	1141	7.47	1.33	2.5	9.6

* Nominal prices are transformed into 2005 prices using the general Consumer Price Index (Source: UK Office for National Statistics).

Table 2: Difference-in-Differences Analysis

Dependent Variable: Price	(1) Mint games	(2) Pre-owned games
post	-3.583*** (0.832)	-4.664*** (0.916)
merged x post	-5.053** (1.414)	-4.519** (1.223)
part of series	4.640*** (0.927)	3.773*** (0.882)
press	0.592** (0.165)	0.665** (0.253)
bundle	25.30** (7.167)	19.74*** (4.775)
online	3.678** (0.980)	1.863** (0.663)
days release	-0.0121** (0.003)	-0.0118** (0.003)
IntPubDev	-1.244 (1.282)	-1.837 (1.589)
IntPubDevMan	0.778 (5.295)	2.249 (5.937)
constant	15.64*** (2.755)	15.69*** (1.997)
Observations	2395	1402
R-squared	0.567	0.598
Cluster FE	Console Retailer, console	Console Retailer, console

Notes: Standard errors in parentheses are clustered at the console level. We include 10 publishers and 11 developers' fixed-effects. The symbols ***, **, and * represent significance at the 1%, 5%, and 10% level respectively.

Table 3: Heterogeneous Treatment Effects by Console

Dependent Variable: Price	Mint (1)	Pre-owned (2)	Mint (3)	Pre-owned (4)
post_NDS	-1.223 (1.066)	-2.477* (1.154)	-0.0440 (1.326)	-1.913 (1.155)
post_PS2	-2.405*** (0.382)	-2.660*** (0.363)	-0.566 (0.424)	-1.590*** (0.332)
post_PS3	-8.814*** (0.588)	-10.14*** (0.582)	-6.624*** (0.842)	-8.813*** (0.742)
post_PSP	-3.728*** (0.730)	-5.299*** (0.836)	-2.925** (0.952)	-4.637*** (0.945)
post_Wii	-7.502*** (1.828)	-8.183*** (1.508)	-6.457** (1.874)	-6.696*** (1.292)
post_XBOX	-7.187*** (0.408)	-6.772*** (0.595)	-5.728*** (0.537)	-4.345*** (0.483)
merged x post_NDS			-3.951** (1.025)	-2.000** (0.641)
merged x post_PS2			-5.825*** (0.873)	-3.088*** (0.652)
merged x post_PS3			-7.113*** (1.055)	-4.484*** (0.985)
merged x post_PSP			-2.461** (0.931)	-1.681** (0.456)
merged x post_Wii			-3.244** (0.919)	-8.002*** (1.141)
merged x post_XBOX			-4.741*** (1.044)	-9.486*** (0.824)
Observations	2395	1402	2395	1402
R-squared	0.569	0.615	0.578	0.615

Notes: Standard errors in parentheses are clustered at the console level. We include 10 publishers and 11 developers' fixed-effects. The symbols ***, **, and * represent significance at the 1%, 5%, and 10% level respectively.

Table 4: Analysis by Retailer

Dependent Variable: Price	Mint			Pre-Owned		
	Estimate (1)	DiD Game (2)	DiD Gamestat (3)	Estimate (4)	DiD Game (5)	DiD Gamestat (6)
post_AMAZON	-5.702** (1.491)	2.326 (1.518)	3.564 (2.124)	-5.036*** (0.806)	4.202** (1.503)	4.100** (1.643)
post_ASDA	-3.449** (1.061)	4.579** (1.208)	5.817*** (1.307)	-	-	-
post_CeX	-	-	-	-4.031** (1.420)	5.206*** (1.035)	5.104** (1.356)
post_EBAY	-1.751 (1.598)	6.277* (3.020)	7.515* (3.487)	-	-	-
post_GAME	-8.028*** (1.633)	-	1.238 (0.978)	-9.238*** (1.561)	-	0.102 (1.114)
post_GAMESTAT	-9.266*** (2.198)	-1.238 (0.978)	-	-9.136*** (1.859)	0.102 (1.114)	-
post_HMV	-6.862*** (1.351)	1.166 (0.735)	2.404 (1.567)	-	-	-
post_PLAY	-1.236 (1.281)	6.792** (2.022)	8.030** (2.612)	-5.063*** (0.714)	4.174** (1.404)	4.073 (1.836)
post_TESCO	-1.494 (1.323)	6.534*** (1.217)	7.772*** (1.437)	-	-	-
Observations	2395			1402		
R-squared	0.572			0.599		

Notes: Standard errors in parentheses are clustered at the console level. We include 10 publishers and 11 developers' fixed-effects. The coefficients' estimates for all other control variables are not reported but they are almost identical with those reported in table 2. In columns (2) and (5) we report the difference between each of the post-merger retailer-specific estimated coefficients from columns (1) and (4) respectively and the coefficient estimate for Games (e.g., $\beta_j - \beta_{Games}$). Similarly in columns (3) and (6), we report the difference between each of the retailer-specific estimated coefficients from columns (1) and (4) respectively and the coefficient estimate for Gamestation (e.g., $\beta_j - \beta_{Gamestation}$). The symbols ***, **, and * represent significance at the 1%, 5%, and 10% level respectively.

Table 5: Robustness checks: Mint games

Dependent Variable Price Mint	(1)	(2)	(3)	(4)	(5)
post	-2.703*	-2.436*	-4.619**	-4.068**	-0.549
	(1.059)	(0.978)	(1.577)	(1.126)	(2.129)
merged x post	-4.725***	-4.774***	-4.291**	-4.114***	-5.046**
	(0.868)	(0.833)	(1.183)	(1.000)	(1.258)
part of series	3.667***	5.478***	3.552***	3.628***	-
	(0.823)	(1.205)	(0.690)	(0.820)	
press	0.568**	0.611**	0.757**	0.465**	0.180
	(0.175)	(0.210)	(0.232)	(0.156)	(0.988)
bundle	16.29***	21.98***	24.10***	-	34.95***
	(1.348)	(3.498)	(3.772)		(4.427)
online	3.930**	3.472*	2.501**	2.721**	7.040**
	(1.196)	(1.463)	(0.876)	(0.990)	(2.283)
days release	-0.012**	-0.011*	-0.011**	-0.011**	-0.012**
	(0.005)	(0.005)	(0.004)	(0.003)	(0.004)
IntPubDev	-0.764	0.529	-0.625	-0.364	5.005
	(1.323)	(2.556)	(1.753)	(1.255)	(2.569)
IntPubDevMan	2.869	6.591	8.397***	0.256	7.597
	(5.515)	(5.088)	(1.621)	(4.014)	(5.775)
constant	23.22***	21.72***	16.51***	19.29***	16.59
	(3.356)	(2.934)	(4.035)	(3.108)	(11.49)
Observations	1212	1298	1842	2296	442
R-squared	0.539	0.552	0.600	0.554	0.751

Notes: Standard errors in parentheses are clustered at the console level. We include 10 publishers and 11 developers' fixed-effects. The symbols ***, **, and * represent significance at the 1%, 5%, and 10% level respectively.

Table 6: Robustness checks: Pre-owned games

Dependent Variable: Price Pre-owned	(1)	(2)	(3)	(4)	(5)
post	-4.092*** (0.894)	-3.796** (0.975)	-4.853** (1.353)	-4.820*** (1.171)	-3.343 (2.055)
merged x post	-5.060** (1.352)	-4.829** (1.239)	-4.993*** (1.237)	-4.460** (1.321)	-3.637** (1.222)
part of series	3.050** (1.184)	4.353** (1.252)	2.824** (0.872)	2.748** (0.774)	-
press	0.330 (0.299)	0.279 (0.363)	0.793** (0.296)	0.478 (0.290)	-0.542 (1.094)
bundle	13.27*** (1.375)	17.12*** (2.252)	21.51*** (3.833)	-	29.50*** (5.383)
online	3.125* (1.227)	2.994 (1.654)	1.703* (0.813)	1.599* (0.782)	6.603 (3.888)
days release	-0.012** (0.005)	-0.011** (0.004)	-0.011** (0.003)	-0.011*** (0.003)	-0.009** (0.003)
IntPubDev	-1.059 (1.440)	-1.579 (2.442)	-1.972 (1.908)	-1.090 (1.479)	1.164 (2.144)
IntPubDevMan	7.855 (4.251)	10.56** (3.583)	10.74*** (2.656)	1.636 (5.120)	9.010 (8.999)
constant	28.60*** (1.714)	14.09*** (2.050)	26.80*** (1.826)	19.65*** (1.942)	46.21** (11.99)
Observations	686	723	1121	1349	267
R-squared	0.567	0.599	0.632	0.599	0.783

Notes: Standard errors in parentheses are clustered at the console level. We include 10 publishers and 11 developers' fixed-effects. The symbols ***, **, and * represent significance at the 1%, 5%, and 10% level respectively.

Appendix. List of games titles included in the dataset

Table A.1 below lists the games included in the database on which we perform our econometric analysis. The first column lists the title, while the second the console that supports it and the third whether it belongs to pre-merger or to the post-merger sample.

Table A.1: List of the games included in our dataset

	Title	Console	Sample
1	24 the game	PS2	pre-merger
2	300 march to glory	PSP	pre-merger
3	Mortal Kombat: Armageddon	Wii	pre-merger
4	Tom Clancy ghost recon advanced warfighter 2	Xbox360	pre-merger
5	after burner black falcon	PSP	pre-merger
6	animal crossing wild world	NDS	pre-merger
7	babe	PS2	pre-merger
8	batman begins	PS2	pre-merger
9	beverly hills cop	PS2	pre-merger
10	blazing angels squadrons of ww2	PS3	pre-merger
11	brain training	NDS	pre-merger
12	bratz ponyz	NDS	pre-merger
13	brian lara international cricket 2007	PS2	pre-merger
14	brian lara international cricket 2007	Xbox360	pre-merger
15	brothers in arms	NDS	pre-merger
16	burnout dominator	PS2	pre-merger
17	buzz! junior jungle party	PS2	pre-merger
18	buzz! junior robo jam bundle	PS2	pre-merger
19	buzz! mega quiz	PS2	pre-merger
20	call of duty 3	PS2	pre-merger
21	call of duty 3	PS3	pre-merger
22	call of duty 3	Xbox360	pre-merger
23	call of duty 3 roads to victory	PSP	pre-merger
24	call of juarez	Xbox360	pre-merger
25	canis canem edit	PS2	pre-merger
26	captain scarlet	PS2	pre-merger
27	championship manager 2007	PSP	pre-merger
28	championship manager 2007	Xbox360	pre-merger
29	charlie and the chocolate factory	PS2	pre-merger
30	charlottes web	PS2	pre-merger
31	chicken little	PS2	pre-merger
32	colin mcrae dirt	Xbox360	pre-merger
33	command and conquer 3 tiberium wars	Xbox360	pre-merger
34	cooking mama	Wii	pre-merger

	Title	Console	Sample
35	crackdown	Xbox360	pre-merger
36	dead rising classic	Xbox360	pre-merger
37	def jam icon	PS3	pre-merger
38	diddy kong racing ds	NDS	pre-merger
39	dragon ball z:shin budokai 2	PSP	pre-merger
40	driver 76	PSP	pre-merger
41	driver parallel lines	PS2	pre-merger
42	driver parallel lines	Wii	pre-merger
43	elite beat agents	NDS	pre-merger
44	eragon	PS2	pre-merger
45	eyetoy kinetic combat	PS2	pre-merger
46	fantastic four: rise of the silver surfer	NDS	pre-merger
47	fantastic four: rise of the silver surfer	PS2	pre-merger
48	fantastic four: rise of the silver surfer	PS3	pre-merger
49	fantastic four: rise of the silver surfer	Wii	pre-merger
50	fantastic four: rise of the silver surfer	Xbox360	pre-merger
51	far cry vengeance	Wii	pre-merger
52	fifa 07	PS2	pre-merger
53	fifa 07	Xbox360	pre-merger
54	fight night round 3	PS3	pre-merger
55	final fantasy 3	NDS	pre-merger
56	final fantasy X	PS2	pre-merger
57	final fantasy XII	PS2	pre-merger
58	final fantasy: fables chocobo tales	NDS	pre-merger
59	flatout ultimate carnage	Xbox360	pre-merger
60	flushed away	PS2	pre-merger
61	football generation	PS2	pre-merger
62	football manager 07	PSP	pre-merger
63	formula one championship edition	PS3	pre-merger
64	forza motorsports 2	Xbox360	pre-merger
65	free running	PS2	pre-merger
66	gears of war	Xbox360	pre-merger
67	ghost rider	PS2	pre-merger
68	god of war 2	PS2	pre-merger
69	grand theft auto: liberty city stories	PSP	pre-merger
70	grand theft auto: vice city stories	PS2	pre-merger
71	grand theft auto: vice city stories	PSP	pre-merger
72	guitar hero 2 bundle	Xbox360	pre-merger
73	happy feet	NDS	pre-merger
74	happy feet	PS2	pre-merger
75	harry potter order of the phoenix	NDS	pre-merger
76	harry potter order of the phoenix	PS2	pre-merger
77	harry potter order of the phoenix	PS3	pre-merger

	Title	Console	Sample
78	harry potter order of the phoenix	PSP	pre-merger
79	harry potter order of the phoenix	Wii	pre-merger
80	harry potter order of the phoenix	Xbox360	pre-merger
81	harvest moon	NDS	pre-merger
82	hot brains	PSP	pre-merger
83	hour of victory	Xbox360	pre-merger
84	ice age 2	PS2	pre-merger
85	just cause	PS2	pre-merger
86	lets make a soccer team	PS2	pre-merger
87	little britain	PS2	pre-merger
88	lost planet extreme condition	Xbox360	pre-merger
89	mario kart DS	NDS	pre-merger
90	mario party 8	Wii	pre-merger
91	mario strikers charged football	Wii	pre-merger
92	matrix path of neo	PS2	pre-merger
93	medal of honour heroes	PSP	pre-merger
94	medal of honour vanguard	PS2	pre-merger
95	meet the robinsons	NDS	pre-merger
96	meet the robinsons	PS2	pre-merger
97	mercury meltdown revolution	Wii	pre-merger
98	metal gear solid: portable ops	PSP	pre-merger
99	micro machines	PS2	pre-merger
100	mind quiz: your brain coach	NDS	pre-merger
101	more brain training	NDS	pre-merger
102	motorstorm	PS3	pre-merger
103	need for speed carbon	PS2	pre-merger
104	need for speed carbon	PS3	pre-merger
105	need for speed carbon	PSP	pre-merger
106	need for speed carbon	Xbox360	pre-merger
107	new super mario bros	NDS	pre-merger
108	ninja gaiden sigma	PS3	pre-merger
109	nintendogs labrador and friends	NDS	pre-merger
110	oblivion	PS3	pre-merger
111	overlord	Xbox360	pre-merger
112	pirates of the caribbean 2: the legend of jack sparrow	PS2	pre-merger
113	pirates of the caribbean 3 at world's end	NDS	pre-merger
114	pirates of the caribbean 3 at world's end	PS2	pre-merger
115	pirates of the caribbean 3 at world's end	PS3	pre-merger
116	pirates of the caribbean 3 at world's end	PSP	pre-merger
117	pirates of the caribbean 3 at world's end	Wii	pre-merger
118	pirates of the caribbean 3 at world's end	Xbox360	pre-merger
119	pokemon ranger	NDS	pre-merger
120	pony friends	NDS	pre-merger

	Title	Console	Sample
121	pro evolution soccer 5	PS2	pre-merger
122	pro evolution soccer 6	PS2	pre-merger
123	pro evolution soccer 6	Xbox360	pre-merger
124	ratchet & clank: size matters	PSP	pre-merger
125	resident evil 4	Wii	pre-merger
126	resistance fall of man	PS3	pre-merger
127	ridge racer 7	PS3	pre-merger
128	rocky balboa	PSP	pre-merger
129	rollercoaster world	PS2	pre-merger
130	saints row	Xbox360	pre-merger
131	sbk 07: superbike world championship	PS2	pre-merger
132	scarface the world is yours	Wii	pre-merger
133	sega presents touch darts	NDS	pre-merger
134	shadowrun	Xbox360	pre-merger
135	shrek the third	NDS	pre-merger
136	shrek the third	PS2	pre-merger
137	shrek the third	Wii	pre-merger
138	shrek the third	Xbox360	pre-merger
139	sim city	NDS	pre-merger
140	sims 2 pets	Wii	pre-merger
141	socom u.s. navy seals combined assault	PS2	pre-merger
142	socom u.s. navy seals fireteam bravo 2	PSP	pre-merger
143	sonic and the secret rings	Wii	pre-merger
144	sonic riders	PS2	pre-merger
145	sonic rivals	PSP	pre-merger
146	spectrobes	NDS	pre-merger
147	spiderman 3	NDS	pre-merger
148	spiderman 3	PS2	pre-merger
149	spiderman 3	PS3	pre-merger
150	spiderman 3	Wii	pre-merger
151	spiderman 3	Xbox360	pre-merger
152	spongebob battle for volcano island	PS2	pre-merger
153	spy hunter nowhere to run	PS2	pre-merger
154	super monkey ball: banana blitz	Wii	pre-merger
155	table tennis	Xbox360	pre-merger
156	tamagotchi connection 2	NDS	pre-merger
157	teenage mutant ninja turtles	NDS	pre-merger
158	teenage mutant ninja turtles	PS2	pre-merger
159	teenage mutant ninja turtles	PSP	pre-merger
160	teenage mutant ninja turtles	Wii	pre-merger
161	teenage mutant ninja turtles	Xbox360	pre-merger
162	test drive unlimited	PS2	pre-merger
163	the chronicles of narnia: the lion, the witch and the wardrobe	PS2	pre-merger

	Title	Console	Sample
164	the da vinci code	PS2	pre-merger
165	the darkness	Xbox360	pre-merger
166	the incredibles: rise of the underminer	PS2	pre-merger
167	the legend of Zelda: twilight princess	Wii	pre-merger
168	the simpsons hit and run	PS2	pre-merger
169	the ultimate world cup quiz	PS2	pre-merger
170	tiger woods pga tour 2007	PS3	pre-merger
171	tiger woods pga tour 2007	Wii	pre-merger
172	tom clancys rainbow 6 vegas	PSP	pre-merger
173	tom clancys rainbow 6 vegas	Xbox360	pre-merger
174	tom clancys splinter cell double agent	PS3	pre-merger
175	tom clancys splinter cell double agent	Xbox360	pre-merger
176	tomb raider anniversary	PS2	pre-merger
177	tomb raider legend	NDS	pre-merger
178	tomb raider legend	PS2	pre-merger
179	tony hawks project 8	PS3	pre-merger
180	touchmaster	NDS	pre-merger
181	uefa champions league 2006-2007	PS2	pre-merger
182	uefa champions league 2006-2007	PSP	pre-merger
183	uefa champions league 2006-2007	Xbox360	pre-merger
184	virtua fighter 5	PS3	pre-merger
185	virtua tennis 3	PS3	pre-merger
186	virtua tennis 3	PSP	pre-merger
187	virtua tennis 3	Wii	pre-merger
188	virtua tennis 3	Xbox360	pre-merger
189	wario ware: smooth moves	Wii	pre-merger
190	wario: master of disguise	NDS	pre-merger
191	who wants to be a millionaire	PS2	pre-merger
192	wii play and wireless remote	Wii	pre-merger
193	world snooker championship 2007	PS3	pre-merger
194	wwe smackdown vs raw 2007	PS2	pre-merger
195	wwi aces of the sky	PS2	pre-merger
196	yu-gi-oh!gx tag force	PSP	pre-merger
197	2010 fifa world cup	PS3	post-merger
198	2010 fifa world cup	PSP	post-merger
199	2010 fifa world cup	Wii	post-merger
200	2010 fifa world cup	Xbox360	post-merger
201	Assassin's Creed: Bloodlines	PSP	post-merger
202	Band Hero	PS3	post-merger
203	Band Hero	PS3	post-merger
204	Batman: Arkham Asylum Game of the Year Edition	PS3	post-merger
205	Battlefield Bad Company 2	PS3	post-merger
206	Battlefield Bad Company 2	Xbox360	post-merger

	Title	Console	Sample
207	Ben 10 Alien Force Vilgax Attacks	PS2	post-merger
208	Ben 10: Alien Force	PS2	post-merger
209	Brutal Legend	PS3	post-merger
210	Buzz The Pop Quiz Solus	PS2	post-merger
211	Call of Duty 4: Modern Warfare	PS3	post-merger
212	Call of Duty 4: Modern Warfare	Xbox360	post-merger
213	Call of Duty: Modern Warfare 2	Xbox360	post-merger
214	Call of Duty: Modern Warfare 2 (with Exclusive Gamerpics)	Xbox360	post-merger
215	Call of Duty: Modern Warfare 2 Limited GAME Exclusive Veteran Package	PS3	post-merger
216	Call of Duty: Modern Warfare 2 Limited GAME Exclusive Veteran Package	Xbox360	post-merger
217	Call of Duty: Modern Warfare 2 Limited Hardened Edition	PS3	post-merger
218	Call of Duty: World at War	PS2	post-merger
219	Call of Duty: World at War	PS3	post-merger
220	Cars Race-O-Rama	PS2	post-merger
221	Cars Race-O-Rama	Wii	post-merger
222	Combat of Giants: Mutant Insect	NDS	post-merger
223	Cooking Mama 3	NDS	post-merger
224	Crash Bandicoot: Mind Over Mutant	PS2	post-merger
225	DJ Hero	PS3	post-merger
226	Darksiders	PS3	post-merger
227	Darksiders	Xbox360	post-merger
228	Daxter - Platinum	PSP	post-merger
229	Dead Space	PS3	post-merger
230	Dead to Rights: Retribution	PS3	post-merger
231	Diabolik	PS2	post-merger
232	Dissidia: Final Fantasy	PSP	post-merger
233	Dr. Kawashima's Brain Training: How Old Is Your Brain?	NDS	post-merger
234	Dragon Age: Origins	PS3	post-merger
235	Dragon Age: Origins	Xbox360	post-merger
236	Dragon Age: Origins GAME Exclusive Collector's Edition	PS3	post-merger
237	EA Sports Active (Wii Balance Board Compatible)	Wii	post-merger
238	EA Sports Active: More Workouts	Wii	post-merger
239	EyePet	PS3	post-merger
240	EyePet	PS3	post-merger
241	Fable 2 GOTY Classic	Xbox360	post-merger
242	Fallout 3	PS3	post-merger
243	Family Trainer	Wii	post-merger
244	Final Fantasy XIII	PS3	post-merger
245	Final Fantasy XIII	Xbox360	post-merger
246	Forza Motorsport 3	Xbox360	post-merger
247	GI Joe: The Rise of Cobra	PS2	post-merger
248	GTA Chinatown Wars	PSP	post-merger

	Title	Console	Sample
249	God Of War Platinum	PSP	post-merger
250	God of War III	PS3	post-merger
251	Gran Turismo	PSP	post-merger
252	Grand Theft Auto IV Platinum	PS3	post-merger
253	Grand Theft Auto: Episodes from Liberty City	PS3	post-merger
254	Grid: Reloaded Platinum	PS3	post-merger
255	Guitar Hero 5 (Software Only)	PS3	post-merger
256	Guitar Hero: Greatest Hits	Xbox360	post-merger
257	Halo 3 Classic	Xbox360	post-merger
258	Halo 3: ODST including Halo Reach BETA Access	Xbox360	post-merger
259	Halo Wars Classic	Xbox360	post-merger
260	Harry Potter and the Half Blood Prince	PS2	post-merger
261	Heavy Rain	PS3	post-merger
262	IL2 Sturmovik: Birds of Prey	PSP	post-merger
263	Ice Age 3: Dawn of the Dinosaurs	PS2	post-merger
264	Invizimals	PSP	post-merger
265	Invizimals	PSP	post-merger
266	Iron Man 2	PS3	post-merger
267	Iron Man 2	PSP	post-merger
268	James Cameron's Avatar: The Game	PS3	post-merger
269	James Cameron's Avatar: The Game	PSP	post-merger
270	James Cameron's Avatar: The Game	Xbox360	post-merger
271	James Cameron's Avatar: The Game Limited Collector's Edition	Wii	post-merger
272	Jelly Belly: Ballistic Beans	PS2	post-merger
273	Jewel Quest Mysteries : Curse Of The Emerald Tear	NDS	post-merger
274	Just Cause 2	PS3	post-merger
275	Just Cause 2	Xbox360	post-merger
276	Just Cause 2 Limited Edition	PS3	post-merger
277	Just Cause 2 Limited Edition	Xbox360	post-merger
278	Just Dance	Wii	post-merger
279	Killzone 2	PS3	post-merger
280	King of Fighters XII	PS3	post-merger
281	Kingdom Hearts 358/2 Days	NDS	post-merger
282	LEGO Batman: The Video Game	NDS	post-merger
283	LEGO Batman: The Video Game	PS2	post-merger
284	LEGO Batman: The Video Game	PSP	post-merger
285	LEGO Batman: The Video Game	Wii	post-merger
286	LEGO Battles	NDS	post-merger
287	LEGO Indiana Jones 2: The Adventure Continues	PSP	post-merger
288	Lips: Party Classics	Xbox360	post-merger
289	LittleBigPlanet	PSP	post-merger
290	LittleBigPlanet Game of the Year Edition	PS3	post-merger
291	Mah Jong Quest Expeditions	NDS	post-merger

	Title	Console	Sample
292	Mario Kart DS	NDS	post-merger
293	Mario Kart Wii with Official Wii Wheel	Wii	post-merger
294	Mario and Luigi: Bowser's Inside Story	NDS	post-merger
295	Mario and Sonic at the Olympic Games	Wii	post-merger
296	Marvel Ultimate Alliance 2	PS2	post-merger
297	Marvel Ultimate Alliance 2: Jean Grey Edition	PS3	post-merger
298	Mass Effect - Classic	Xbox360	post-merger
299	Medal of Honor Heroes 2	Wii	post-merger
300	Metro 2033 GAME Exclusive Limited Edition	Xbox360	post-merger
301	Minority Report	PS2	post-merger
302	Mirror's Edge	PS3	post-merger
303	Mirror's Edge	Xbox360	post-merger
304	Monster Hunter Tri	Wii	post-merger
305	Monster Hunter Tri	Wii	post-merger
306	Monster Hunter Tri Limited Edition Ultimate Hunter Pack	Wii	post-merger
307	Mx vs ATV Reflex	PS3	post-merger
308	Mystery Tales: Time Travel	NDS	post-merger
309	Need for Speed: Shift	PS3	post-merger
310	Need for Speed: Shift Special Edition	PS3	post-merger
311	Need for Speed: Undercover	PS3	post-merger
312	New Super Mario Bros	Wii	post-merger
313	New Super Mario Bros.	NDS	post-merger
314	Nier	PS3	post-merger
315	Nier	Xbox360	post-merger
316	Oblivion: Game of the Year Edition - Platinum	PS3	post-merger
317	Peppa Pig	NDS	post-merger
318	Peppa Pig 2: Fun and Games	NDS	post-merger
319	Planet 51	PS3	post-merger
320	Pokemon Heart Gold (Includes Pokewalker)	NDS	post-merger
321	Pokemon Soul Silver (Includes Pokewalker)	NDS	post-merger
322	Princess Melody	NDS	post-merger
323	Pro Evolution Soccer 2009	PS2	post-merger
324	Pro Evolution Soccer 2010	PS2	post-merger
325	Professor Layton and Pandora's Box	NDS	post-merger
326	Ratchet & Clank: Quest For Booty	PS3	post-merger
327	Ratchet & Clank: Size Matters - Platinum	PSP	post-merger
328	Resident Evil 5: Gold Edition	PS3	post-merger
329	Resident Evil 5: Gold Edition	Xbox360	post-merger
330	Rhythm Paradise	NDS	post-merger
331	Rock Band Song Pack 2	PS3	post-merger
332	Rock Band Unplugged	PSP	post-merger
333	Rugby League 3	Wii	post-merger
334	Rugby League Challenge	PSP	post-merger

	Title	Console	Sample
335	Safari Adventures Africa	PS2	post-merger
336	Scrabble 2009	NDS	post-merger
337	Secret Service	PS2	post-merger
338	Sega Mega Drive Ultimate Collection	PS3	post-merger
339	Sega Mega Drive Ultimate Collection	Xbox360	post-merger
340	Silent Hill: Homecoming	PS3	post-merger
341	Sin and Punishment 2: Successor of the Skies	Wii	post-merger
342	Sonic & SEGA All-Stars Racing	NDS	post-merger
343	Sonic & SEGA All-Stars Racing	PS3	post-merger
344	Sonic & SEGA All-Stars Racing	Xbox360	post-merger
345	Sonic Classic Collection	NDS	post-merger
346	Star Ocean: The Last Hope International	PS3	post-merger
347	Star Wars: Battlefront Elite Squadron	PSP	post-merger
348	Super Street Fighter IV	PS3	post-merger
349	Super Street Fighter IV	Xbox360	post-merger
350	Tales of Symphonia: Dawn of The New World	Wii	post-merger
351	The God of War Collection	PS3	post-merger
352	The Legend of Spyro: Dawn of the Dragon	PS2	post-merger
353	The Legend of Zelda: Spirit Tracks	NDS	post-merger
354	The Princess and the Frog	NDS	post-merger
355	The Saboteur	PS3	post-merger
356	Tiger Woods PGA Tour 09	PSP	post-merger
357	Tiger Woods PGA Tour 2010	PS3	post-merger
358	Tom Clancy's H.A.W.X	Xbox360	post-merger
359	Tom Clancy's Splinter Cell: Conviction	Xbox360	post-merger
360	Tom Clancy's Splinter Cell: Conviction GAME Exclusive Collector's Edition	Xbox360	post-merger
361	Tom Clancy's Splinter Cell: Conviction Shadow Edition	Xbox360	post-merger
362	Tony Hawk: Ride (with GAME Exclusive Wireless Skateboard Controller)	PS3	post-merger
363	Top Gun	PS2	post-merger
364	Toy Story Mania	Wii	post-merger
365	Transformers: Revenge of The Fallen	PS2	post-merger
366	Travel Games for Dummies	NDS	post-merger
367	Uncharted 2: Among Thieves	PS3	post-merger
368	Uncharted 2: Among Thieves Special Edition	PS3	post-merger
369	Up	PSP	post-merger
370	WWE SmackDown vs Raw 2010	PS3	post-merger
371	WWE Smackdown vs Raw 2009 Collector's Edition	PS3	post-merger
372	WarioWare DIY	NDS	post-merger
373	We Sing	Wii	post-merger
374	We Sing	Wii	post-merger
375	Where the Wild Things Are	PS3	post-merger
376	White Knight Chronicles	PS3	post-merger

	Title	Console	Sample
377	Wii Fit Plus	Wii	post-merger
378	Wii Fit Plus	Wii	post-merger
379	Wii Play with Wii Remote	Wii	post-merger
380	Wii Watersports	Wii	post-merger
381	Wipeout HD	PS3	post-merger
382	Wizards Of Waverly Place	NDS	post-merger
383	Wolfenstein	Xbox360	post-merger
384	Your Shape (includes Motion-Tracking Camera)	Wii	post-merger
385	Yu-Gi-Oh! Tag Force 4	PSP	post-merger
386	Yu-Gi-Oh! World Championship 2010	NDS	post-merger
387	advance wars dark conflict	NDS	post-merger
388	aliens vs predator	PS3	post-merger
389	army of two: the 40th day	PS3	post-merger
390	assassin's creed 2	Xbox360	post-merger
391	assassins creed 2	PS3	post-merger
392	assassins creed 2 game exclusive white edition	PS3	post-merger
393	cooking mama	NDS	post-merger
394	fifa 10	NDS	post-merger
395	fifa 10	PS3	post-merger
396	fifa 10	PSP	post-merger
397	grand theft auto: liberty city stories	PSP	post-merger
398	grand theft auto: vice city stories	PSP	post-merger

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