

**Seminar paper:**  
**Effect of social commerce on counterfeit production**  
**size: The case of fashion industry in Thailand**

EE489 Seminar in Industrial Economics

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# Effect of social commerce on counterfeit production size: The case of fashion industry in Thailand

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**ABSTRACT** Counterfeit is one of the greatest issues faced by high end luxury brands. This paper tries to measure impact of social commerce of fake goods which is selling goods online via social media towards counterfeit production. First, the increase in sales is concluded through literature review. Then, we analyze the action of producers after they acknowledge an increase in sales. There are 2 available choices as they could collude where they produce just as demand or not collude where they produce more than demand in the market. To find out the production quantity, we consider producer's payoff from its cost and benefit of colluding. We further take perceived probability of getting arrested into account as it influence production decision. The perceived probability of getting arrested is positively affected by 2 factors: level of risk averseness and level of law enforcement. As a result, we found out 2 important factors that have positive relationship with the collusion among counterfeiters, which are cost of confiscation and fine and perceived probability of getting arrested. At the end, the stronger regulations could be done to reduce production as cost of production increases. Producers produce less leading to an increase in price of counterfeit goods while consumers shift their purchase to original brand due to the lower price gap between the real and the fake. This result may vary due to limitation of data. However, this paper could be the very first reminders for authorities to look at counterfeit production affected by social commerce.

## **Introduction**

Counterfeiting issue has been rooted deeply in Thailand for a long period. Buying and selling counterfeit products seems to be morally accepted in Thai society. The laws registered against this illegal activity have been ignored by the regulators (or the authorities). As a result, you could see counterfeit goods selling along street sides as if it is a normal thing to do.

To worsen the subject, this suppose-to-be-shady selling is now exercising online. As we all know, social media today is so vital that it literally becomes the fifth element of human's life. As a matter of fact, in this social network era, you could practically find everything sold online.

Apart from Thailand, all over the world is facing this very problem. Indeed, to use social media as a mean to sell illegal goods is not new at all. Many even say this social counterfeiting to be on the rise. U.S. is one of the victims of counterfeiting crime seeing from an increase in seizure of counterfeit goods. (see appendix a)

The culprit that got to be blamed the most seems to be China. China is by far the top producers of counterfeit products. US Customs say that 87% of the value of the counterfeits seized is from China during 2008-2010. At the same time, UN report that 70% of counterfeit goods is produced at China. (Turnage, June 25,2013)

Why counterfeiting is bad? This question may come in your mind. Many people view counterfeiting as a harmless activity. Actually, the Prada CEO, Patrizio Bertelli, said that even if he tries its best to protect his brand through laws and regulations, fake goods aren't totally bad because at least it created jobs and it is worse to be the brand that no one wants to copy (Galante, 2012). Many brand owners may be aware of counterfeiting and its impacts perfectly well. However, when it comes to consumer, they don't really know. The example of impact of counterfeit goods toward the economy and society are loss of sales, the damage of brands' image, less incentive for innovation, the jobs losses, and involuntary purchase of counterfeit products.

As already stated, social media such as Facebook and Instagram have actively played an important role as a counterfeit goods distribution method. However, it is not clear whether the effect is only on retailing side by increasing sales or further on production side by increasing the total amount produced.

In this paper, we try to analyze the implicit impact of social media towards counterfeit goods sales and productions whether it could lead to more counterfeit goods production or it

simply provides more access to counterfeit goods. And if it could do so, this paper tries to measure the magnitude of production increased.

## **Literature Review**

Many studies on counterfeiting have been experimented both psychologically and economically. To find whether social media increases production of counterfeit goods or not, this paper studies some literature that explains factor of social media that allow more sales.

### **Understanding counterfeits**

Kay (1990) defines counterfeits as those who copy other brand's trademark, packaging, etc. in order to deceive customers to believe the product to be authentic (as cited in Lan, Liu, Fang, & Lin, 2012). Grossman & Shapiro (1988) say that there are 2 types of counterfeiting: deceptive and non-deceptive. When customers are not aware that they are buying fake products, this situation is called "deceptive counterfeiting". While if consumers know or highly doubt that they are buying fake products, partly from lower price and buying location, this is called "non- deceptive counterfeiting"( Phau, Prendergast, &Chuen, 2001; Mavlanova&Benbunan-Fich, 2011).

### **Counterfeits in fashion business**

As cited in Hilton, Choi, & Chen (2004), focusing on high end clothing and accessories counterfeits, explains counterfeit as a credence goods where its quality is never to be observed even after the products are used (Emons 1997). Hilton et al. (2004) also states that the fashion industries are mostly credence good. The counterfeiter could exploit this opportunity as most fashion designs are simple and values are based on buyer's perception.

### **Determinants of purchasing counterfeit goods**

Lee & Workman, 2011; Yoo& Lee 2009; de Matos, Ituassu, & Rossi (2007) suggest that easy access is one of the factors people purchase fake goods for many reasons by its availability to purchase effortlessly without serious legal issues (as cited inM. Chaudhry, Ahmed, Gill, and Rizwan, 2014).P. Chaudhry (2012) also includes the ease of accessing counterfeits as a factor inducing people to buy counterfeit goods. However, they found out in their research that even though ease of access may have a positive effect on attitude towards buying counterfeit goods, it has an insignificant positive relationship toward purchase intention.

Another factors related the topic is characteristic of online market that is imperfect (Mavlanova&Benbunan-Fich, 2011). In the other words, there is asymmetric information between sellers and buyers online. Internet makes it harder for customer to check the authenticity or quality of the product, this process so called “prior consumer inspection”. The theories used to answer its question are by drawing deception and signaling theory.

The most factor of buying non-deceptive counterfeit is the difference in prices between authentic and fake goods (Lan et al., 2012).Counterfeit allows customer to unbundle the status and the quality aspect of products. As a result, consumer can buy status goods at a fraction of price but needs to tolerate with lower quality (Grossman & Shapiro, 1988).

Alber-Millers (1999) suggests that apart from price, product type, buying situation, and perceived risk also influence the purchase intention of illicit goods. For example, if counterfeit goods are easily observed, consumer may do not want to buy them.

As cited in Phau et al. (2001), Cordell, Wongtada, &Kieschnick (1996) mentions three incentive in counterfeit consumption: status, price and retailer’s distribution.

### **Social media as a marketing tool**

Kim &Ko(2012) found out that social media marketing provides value equity, relationship equity, and brand equity, while these have significantly positive relationship with purchase intention. Stephen &Galak (2012) also supports this ideaby providing data that blog posting activity and community posting activity could lead to higher sales from new customers and repeat customer compared with traditional earned media activity. Fisher and Reuber (2010) suggests that social media is not only marketing tools but also a way of communication which could lead to broader consequences more than just an increase in sales, brand image, and company reputation.

### **Words of mouth and its impact**

Words of mouth marketing or also known as social media marketing is communication between a consumer to another consumer which could lead to purchasing decision while the latter believe this to be non-commercial. (Arndt,1967 (as cited in Lan et al., 2012);Kozinets, Valck, Wojnicki, &Wilner, 2010). Words of mouth can be either positive or negative and it could affect sales if customers are not familiar with the product i.e. people who are not sure about counterfeit quality (Lan et al., 2012).

### **Law enforcement on counterfeits**

As cited in Hilton et al. (2014), Belhumeur (2000) states that counterfeit problems occurs because the legal systems are not updated for some countries, while for others, there may not have protection even at this level at all. Also, when producer face stronger regulation, they can adapt by moving to other countries where law enforcement are not strong. The U.S. International Trade Commission (1984) and Business Week (1985) have reported that many developed countries such as the United States, Japan, and Western Europe pay a great deal of attentions towards counterfeit problems. Each of these countries tries to take measure against the expansion of this illegal activity by i.e. imposing stronger punishment towards importers of these counterfeit products and putting pressure on the countries of origin of counterfeits goods (as cited in Grossman & Shapiro, 1988). Grossman & Shapiro (1988) suggests a small tariff on low-quality imports to reduce the quantity of counterfeit imported instead of higher probability of confiscation that is reported to be welfare-reducing as these costs are later borne by domestic consumers by higher price if consumer values the prestige of the real and the fake equally.

### **Inference of literature review**

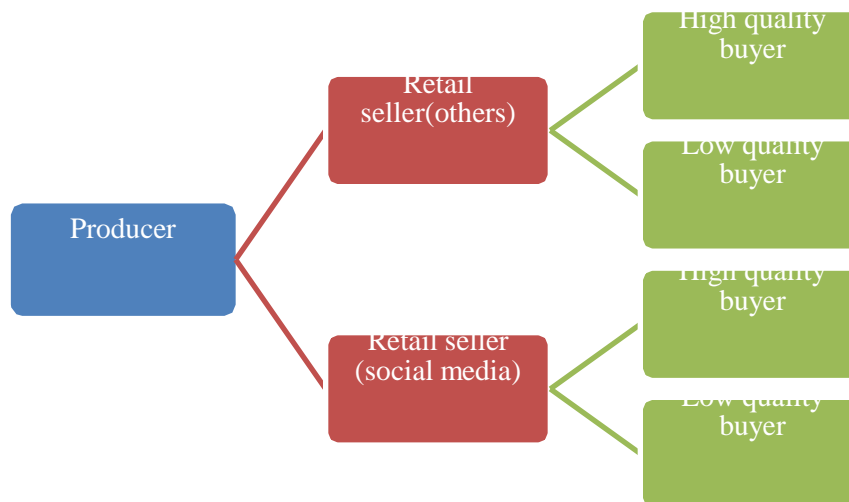
As fashion industry is prone to counterfeits, counterfeits are now one of the biggest issues of high-end luxury brands. As already reviewed, the distribution of retailers is also an important factor affecting buying decision of counterfeit goods. Moreover, social media allows retailers to reach to more customers, and advertise in a very cost-efficiently way. Along with, in countries where counterfeit goods are acceptable in people's mind and adopt weak law enforcement on counterfeits, counterfeits retailers on social media can easily building its brand images based on honesty and acceptable price. Consequently, higher sales can be expected.

### **Methodology**

#### **Research model**

Assume production to be occurred in countries which has lower regulations toward counterfeiting such as China. In this case, small Thai retailers will import these counterfeit goods from China and sell it through social media. This study focuses only non-deceptive counterfeit purchase in high-end fashion clothing and accessories.

Figure1 Overview



Assume an increase in sales. Counterfeit producers have 2 choices to collude where producing just equal to the demand or not collude where producing more than demand. The more counterfeits are produced, the more chance of producers getting arrested. Also, we assume profit maximization where producers always increase production at least to match the order.

### Determinants of counterfeit productions

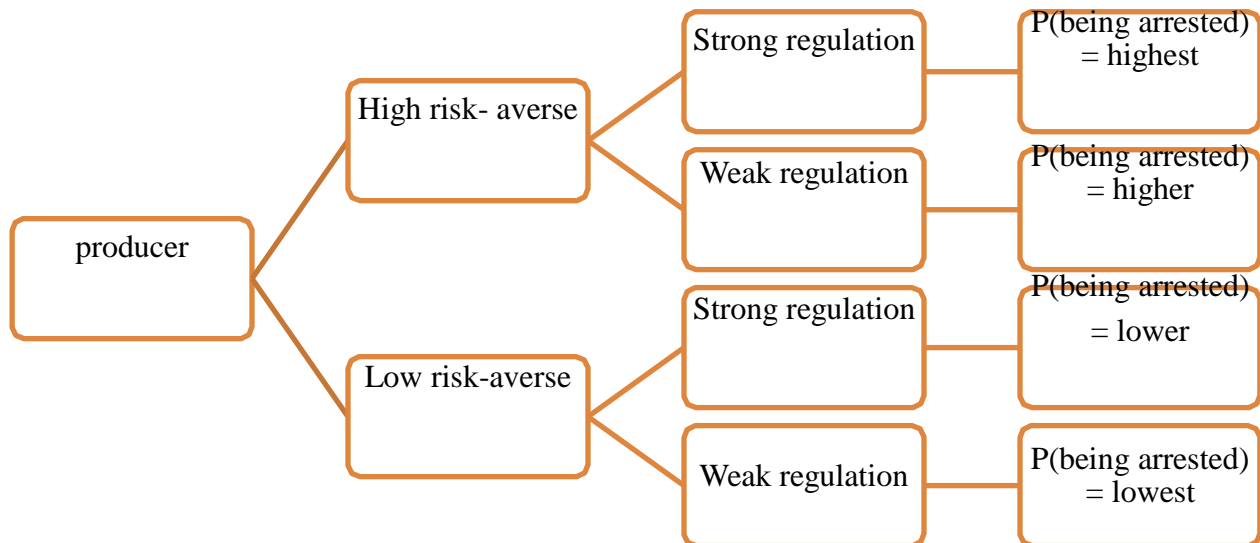
- **Cost and benefit**

Producer will collude or not, he/she will compare his/her cost and benefit from colluding, where cost is from confiscation and fine, while, benefit is the profit from colluding.

- **Probability of getting arrested**

Probability of getting arrested will play an important role in counterfeit production. It influences the size of production as the more you produce the more chance you are getting arrested. However, the probability of getting arrested is not the real one but the one in producer's mind instead. There are 2 factors affecting probability of getting arrested. First, the level of risk averseness of producers themselves has a negative relationship with production size. Second, the law enforcement in the country where the production occurs also has a negative relationship with production size.

**Figure 2 Perceived probability of getting arrested**



Suppose A is one of the biggest counterfeit producers in the world that its action would have a significant effect on market. Also, the rest of the market perform the same action (or the majority of counterfeit producers). Figure 3 is the payoff for firm if collude or not.

**Figure 3 Payoff matrix of counterfeit producers**

| Firm A/ The rest of the world | Not Collude | Collude |
|-------------------------------|-------------|---------|
| Not Collude                   | (a,w)       | (d,x)   |
| Collude                       | (b,y)       | (c,z)   |

For easy understanding, assume profit numerically (appendix b1) where there are 8 big producers including A.

Now incorporate the producer's payoff with the probability of getting arrested:

$$E(\text{payoff}) = P_{(ac,an)} * (C+F) + (1 - P_a) * \prod_{(c,n)} \text{ where}$$

$P_{ac}$  = probability of getting arrested if collude

$P_{an}$  = probability of getting arrested if not collude

$\Pi_c$  = profit if collude

$\Pi_n$  = profit if not collude

C =cost of confiscation (negative)

F = fines (negative)

The new payoff matrix is as follows.

**Figure 4 Payoff matrix with probability of getting arrested**

| <b>Firm A/The rest of the world</b> | <b>Not Collude</b>  | <b>Collude</b>  |
|-------------------------------------|---|---|
| <b>Not Collude</b>                  | $(P_{an}*(C+F)+(1-P_{an})*c,$<br>$P_{an}*(C+F)+(1-P_{an})*c)$ | $(P_{an}*(C+F)+(1-P_{an})*b,$<br>$P_{ac}*(C+F)+(1-P_{ac})*d)$ |
| <b>Collude</b>                      | $(P_{ac}*(C+F)+(1-P_{ac})*d,$<br>$P_{an}*(C+F)+(1-P_{an})*b)$ | $(P_{ac}*(C+F)+(1-P_{ac})*a,$<br>$P_{ac}*(C+F)+(1-P_{ac})*a)$ |

For easy illustration, we provide appendix b2) and 3) for the new payoff matrix where we assume  $C+F=-11$  for each firm. For appendix b2), it depicts the payoff when the probability of getting arrested is high. For b3), it shows the payoff when the probability of getting arrested is low.

### Findings

In the case of high perceived probability of getting arrested, producer A will find it profitable only when it colludes with other firms. Firm A has no choice but to collude. This also happens for the rest firms. Therefore, the equilibrium will be for both parties to collude if both are rational. While, the case of low perceived probability of getting arrested, firm A's profit is highest if it does not collude while other firms collude. For, other firms, even though, for them to

get higher profit is to collude, they may not collude as they know that firm A may not collude. In the second case, there is no equilibrium.

## **Summary**

There are 3 factors affecting collusion between counterfeit producers: cost of confiscation and fine, level of law enforcement, and level of risk averseness of counterfeit producers. High cost of confiscation and fine, strong regulation, and high risk averseness of producer himself/herself will lead to collusion where firms collude. At the end quantity increased only a little.

## **Policy Implications**

Policy maker should address stronger regulations to make counterfeit producers collude. When colluding, producer produce at quantity equal to demand. Higher price could be observed compared to the case of no collusion. Higher price means compensation for consumer to buy fake goods is less. Consumer will switch to buy more of authentic goods. For production side, as demand is lower and stronger law enforcement, producer will find cost of production higher. So producer will need higher return to compensate with higher risk. So now, at the same price level, producers are willing to produce fewer amounts of fake goods.

## **Concluding remarks**

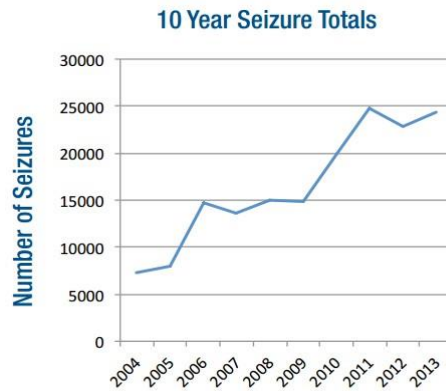
The impact of social media towards counterfeit sales will differ across countries. As country with strong regulation on consumer side may find it hard for counterfeit sales. Also, the payoff matrix is only indicators as in reality the data of these counterfeit firms are confidential. In practice, the cost of confiscations is not the same as each factory has its different size. For example, the high quality counterfeit goods production requires high-tech machine to mimic the specific characteristic of the original brand, while, the low quality fake goods can adopt economies of scale as they are mostly produced at a great amount.

## **Contributions**

The findings of this study will show the effect of counterfeiting on society. If the effect is on production, it means luxury brands sales will be strongly affected. Since, there are more fake products available in the market. When products become all over the market, the potential buyer of brand products may adjust their decisions as they lose the privilege of having those brands. This will reduce brand's revenue and may reduce the investing in new products, resulted in less new products for society. Otherwise, the effect on society will not be that strong as social media only provide more access to counterfeit goods, the amount of fake goods produced are at the same rate. Besides, due to limitation of the information, even though the real result could not be found, this is the very first idea to be developed further when technology or any other published information allow us to take a very close look of the impact of social media towards counterfeit goods sales and production, also the regulators to pay more attention to the counterfeiting problems.

## Appendix

a) Figure 1 The number of counterfeit goods seized by Department of Homeland Security in U.S. during 2004-2013



b) b1) Figure 2 Numerical example of payoff matrix

| Firm A/ The rest of the world | Not Collude | Collude    |
|-------------------------------|-------------|------------|
| Not Collude                   | (2,14)      | (4.5,19.6) |
| Collude                       | (1,22.4)    | (3,21)     |

b2) Figure 3 Numerical example of the new payoff matrix when probability of getting arrested is higher ( $P_{ac}=0.2$ ,  $P_{an}=0.3$ )

| Firm A/The rest of the world | Not Collude  | Collude        |
|------------------------------|--------------|----------------|
| Not Collude                  | (-1.9,-13.3) | (-0.15,-61.12) |
| Collude                      | (-1.4,-7.42) | (0.2,1.4)      |

b3) Figure 4 Numerical example of the new payoff matrix when probability of getting arrested is lower ( $P_{ac}=0.05$ ,  $P_{an}=0.1$ )

| <b>Firm A/The rest of the world</b> | <b>Not Collude</b> | <b>Collude</b> |
|-------------------------------------|--------------------|----------------|
| <b>Not Collude</b>                  | (0.7,4.9)          | (2.95,-58.33)  |
| <b>Collude</b>                      | (0.4,12.46)        | (2.3,16.1)     |

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