



The face value of foreign currency on consumer price perception—The moderating effect of product substitution



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ARTICLE INFO

Article history:

Received 1 November 2010
Received in revised form 1 June 2011
Accepted 1 August 2011
Available online 14 October 2011

Keywords:

Face value effect
Currency numerosity effect
Price perception
Foreign currency

ABSTRACT

Consumers shopping in a foreign environment evaluate prices based on the relationship between the local currency's face value and their home currency. The face value effect suggests that when a foreign currency is a multiple of domestic currency (HDCs), consumers overestimate the actual value. In contrast, when their domestic currency (LDCs) is a fraction of the foreign currency, consumers underestimate the actual value. Three experiments examine a premium product's moderating effect on foreign currency face values. Results show the foreign currency's face value biases consumer price perception. Testing the face value effect, product substitution serves as an important moderator. The findings suggest implications for regional pricing, Internet pricing, and international tourism pricing.

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1. Introduction

In recent decades, more consumers access foreign markets, either through travels or the Internet. Traveling abroad, consumers encounter unfamiliar purchasing challenges, including comparing prices marked in a foreign currency. People generally are familiar with home currency prices of everyday products; however, products purchased in foreign markets require understanding the product's relative cost in their home currency—a time-consuming activity. Because foreign currency valuations are fractions or multiples of the domestic currency, the foreign currency type influences a consumer's ability to evaluate prices.

Shafir, Diamond, and Tversky (1997) suggest people assessing business transactions tend to rely on the nominal rather than the real value of money. When consumers use a different currency, the foreign currency's face value often misleads them (Raghubir & Srivastava, 2002). Consumers underspend when the foreign currency is a multiple of the domestic currency (e.g., 1USD = 1.16 AUD; referred to as a HDC-high denomination currency) and they overspend when the foreign currency is a fraction of the domestic currency (e.g., 1 USD = 0.64 CBP; referred to as a LDC-low denomination currency).

This research examines the impact of HDC and LDC on the consumer attitudinal responses toward price increases. These increases inform consumer perceptions of price fairness (Martin, Ponder, & Lueg, 2009; Oh, 2003; Vaidyanathan & Aggarwal, 2003), and further affects purchase intentions (Chatterjee & McGinnis, 2010). During

conditions of price increases, the currency's face value effect affects purchase intention. In foreign currencies, however, the product attractiveness likely moderates the face value effect.

2. Theoretical background

2.1. Face value effect

When consumers use a foreign currency to purchase a product or service, the foreign currency's nominal value biases them, inducing inadequate adjustments for the exchange rate. This phenomenon is known as “money illusion” (Fisher, 1928), “face value effect” (Raghubir & Srivastava, 2002), or “the denomination effect” (Raghubir & Srivastava, 2009). Several studies show how this phenomenon affects currency evaluations. For example, Shafir et al. (1997) experimentally demonstrate people rely on the nominal rather than real value of money when making such decisions. Money's face value affected participant preferences to a greater extent than the purchasing power of that amount. Raghubir and Srivastava (2002) examine how consumers value products in foreign currencies. Individual product valuations in a foreign currency are biased toward the nominal value (face value) with inadequate exchange rate adjustments (see also Wertenbroch, Soman, & Chattopadhyay, 2007). Similarly, Mishra, Mishra, and Nayakankuppam (2006) document a “bias for the whole”, wherein large currency denominations (e.g., one \$100 bill) are less likely to be spent than an equivalent amount in smaller denominations (e.g., five \$20 bills). Raghubir and Srivastava (2009) suggest that this effect occurs because large denominations are psychologically less fungible than smaller ones, allowing their use as a strategic device to control and regulate spending.

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No matter what this money perception is called, anchoring and adjustment model research suggests that consumers use the price shown in foreign denominations as well as the exchange rate to convert product value into a familiar reference (i.e., their home currency). Combining both the foreign currency's nominal value and the domestic currency's real value may mislead consumers to overweigh the foreign currency's nominal value and inappropriately adjust for exchange rates. This bias often leads to under-spending when a foreign currency is a multiple of the domestic currency (HDCs). In contrast, consumers underestimate one unit of foreign currency when the foreign currency is a fraction of the domestic currency (LDCs), resulting in over-spending.

2.2. Reference point's moderating effect on the face value effect

Research in psychology, perception, and decision-making demonstrate subjective evaluations of nominal quantities (e.g., price) and depend on salient reference standards (Helson, 1964; Stevens, 1957; Tversky & Kahneman, 1991; Wertenbroch et al., 2007). Marketing research reveals consumers evaluate a given price or compare competing good prices, or another reference price, depending on the reference standard's salience (Briesch, Krishnamurthi, Mazumdar, & Raj, 1997; Winer, 1988).

Although money illusion research shows a denomination's nominal (face) value affects consumer perceptions of the real value, research also suggests that consumers consider the nominal price and salient reference values when making a purchase decision. These benchmarks highlight the moderating effect of the reference point on individual value perceptions. For example, Wertenbroch et al. (2007) propose a reversal of the face value effect, assessing real value biased in the opposite direction, when prices and the budget are quoted in the same currency. Considering both price and budget limits are in the same currency, consumers may judge accurately without bias by the currency denomination. In other words, the face value effect cannot predict an assessment difference for transactions in the base (with real price p and real budget b) and in the target currency (with nominal price p^* and nominal budget b^*) because $b^*/p^* = b/p$, no matter the exchange rate (Wertenbroch et al., 2007). These results show that consumers remain misled by the currency face value, contradicting Raghuram and Srivastava (2002). Usually, consumers first conduct a difference assessment with the reference and product prices. If the target (foreign) currency's face value is higher than the base (home) currency, then the product price (target currency) is perceived as relatively less expensive due to the difference between budget and price, $(b^* - p^*)$, is larger than $b - p$. However, if one unit of the target currency is smaller than one unit of base currency, the product price expressed in the target currency is perceived as relatively more expensive because $(b^* - p^*)$ is smaller than $(b - p)$. This phenomenon leads consumers to under-spend in LDC countries and overspend in HDC countries. Substitute products also likely affect consumer behavior and serve as another reference point on the face value effect.

2.3. Research proposition: substitute goods' moderating effect on foreign currencies' face value

Prior research shows price ceases to be an objective criterion for unfamiliar foreign currencies (Callow & Lerman, 2003). The money illusion effect suggests that consumers sometimes do not handle economic transactions rationally (Shafir et al., 1997). These individuals show bias toward the nominal monetary value (the discount face value), ignoring the real monetary value (the discount percentage). In addition, Dehaene and Marques (2002) suggest that consumers are better off using a familiar currency to judge prices. Hence, currency denominations play a significant role shaping consumer attitudinal reactions to price reductions. Foreign currency

familiarity increases the influence by price differentials more than when consumers are less familiar with the denomination (Callow & Lerman, 2003).

While price discounts in foreign currencies are well documented (Callow & Lerman, 2003; Lawson, Gnoth, and Paulin, 1995), this research focuses on product price increase effects on consumer purchase intentions when they use unfamiliar foreign currencies. Product price increases cue consumer perceptions of price fairness (Lawson, Gnoth, and Paulin, 1995; Martin et al., 2009; Oh, 2003; Vaidyanathan & Aggarwal, 2003) and further affect customer retention (Chebat & Slusarczyk, 2005), customer loyalty (Martin et al., 2009), and purchase intention (Chatterjee & McGinnis, 2010). According to the face value effect (Raghuram & Srivastava, 2002), consumers either overspend or underspend when purchasing a foreign currency priced product, depending on whether the exchange rate is a multiple or fraction of home currency's equivalent unit. Prices shown by high denomination currencies likely cause consumers to misunderstand the increased numeral range, feeling that the products are too expensive to buy, lowering the purchase intention. Conversely, consumers seeing prices in low-denomination currencies likely believe the products are less expensive, inducing a higher purchase intention. In addition, substitute products in their home country likely moderate the consumer price evaluations. Substitute products are similar enough to satisfy the same consumer needs, but they are not identical. The greater the difference between a domestic substitute product and the intended product, the more likely the consumer will purchase the substitute product (Yim, Chan, & Hung, 2007). Consumers shopping in another country evaluate the product based on whether or not they can get a less expensive substitute product in their home country. The face value effect moderates substitute goods' attractiveness.

In this research, three studies manipulate the attractiveness of substitute products. Study 1 examines whether or not difference between a product and substitute moderates the face value effect on the consumer purchase intentions. Study 2 adds a substitute product's availability to determine whether the availability of domestic substitute goods, product differences, and currency denomination affect consumer perceptions and purchase willingness. Study 3, considers how price differences between products, product differences, and foreign currencies interfere with consumer perceptions and their purchasing willingness toward a particular product.

These three studies were conducted in Taiwan, so the NTD (New Taiwan dollar) is the home currency. For each study, two foreign currencies represent a multiple of the domestic currency (HDC—the Japanese yen) and a fraction of the domestic currency (LDC—the U.S. dollar). These currencies were chosen because the exchange rates were similar (exchange rates were 1 NTD = 3.33 JPY; 1 NTD = 0.03 USD). In addition, the product categories are plausible purchases for all three countries.

3. Pilot study

Previous research finds product differences sway consumer intentions (Yim et al., 2007). To differentiate between products and their substitutes, a pretest involving 33 undergraduate students helped define the maximum and minimum variation in product sets. The students were presented with a purchase situation. They were instructed to indicate the difference between product sets on a seven-point rating scale (1 = strongly disagree, 7 = strongly agree). Five product sets in the scenario represent novel products launched in other countries versus substitutes launched in Taiwan. These product comparisons include: (1) a portable solar cell phone charger versus a standard cell phone charger; (2) a multi-functional alarm clock versus a standard alarm clock; (3) a smart piggy bank versus a standard piggy bank; (4) strapless flip-flops versus ordinary flip-flops; and (5) a long-lasting mosquito repellent bracelet versus regular mosquito repellent. To avoid pre-conceived opinions that

participants might have about the substitutes' prices, products that were rarely available in Taiwan (e.g., a portable solar cell phone charger) and product substitutes readily available in Taiwan (e.g., a standard cell phone charger) were chosen to make a comparison. For each item, participants were asked to estimate the retail price in Taiwan.

Table 1 shows the pilot study results, including the means and statistical results for the five product sets. The results show the product difference for “portable solar cell phone charger vs. a standard cell phone charger” is largest ($M=5.70$) and the “multi-functional alarm clock vs. a standard alarm clock” ($M=4.18$) is smallest ($F(1, 64) = 14.44, p < 0.001$) between product and substitutes. In the following studies, these products become the product set manipulations.

4. Study 1: product differences' moderating effect on the currency face value effect

4.1. Objectives and hypotheses

Study 1 examines the proposition that difference between products and substitutes moderates the face value effect evaluations of a foreign currency priced product. This study posits the currency denomination and differences between products and substitute products influence the consumer purchase intentions.

This research also examines the face value effect under price premium conditions. When travelers go aboard and they find product prices higher than expected, under what circumstances would they still make purchases? In this scenario, shoppers do not know that the product can be acquired at a lower cost and no close substitute exists. Because the product is attractive, the price premium seems unimportant and purchase intention does not differ regardless of HDCs or LDCs. In contrast, the face value effect exists when the product is unattractive. When the product differs little from a substitute, the high-priced good becomes less attractive, and purchase intention is lower. HDCs exacerbate this condition because the face value makes the product more expensive. Study 1 hypothesizes the following relationship.

H1. The purchase intention will be lower when the product differs little from a substitute good, especially under conditions of HDCs compared to LDCs.

4.2. Method

One hundred and seventy four undergraduate students participated in a 2 (currency denomination: HDCs vs. LDCs) \times 2 (product substitution differential: large vs. small) between-subjects design. The participant ages range from 18 to 24 years with a mean of 20.41 years ($SD=1.2$). Males are less than half of respondents (34.4%). Preliminary statistical tests found no gender differences regarding the test variables.

Table 1
Average price of substitutes and means of differences between products and substitutes.

Product sets (product vs. substitute)	Average price of substitutes (NTD)	Means of difference	Standard deviation of difference
Portable solar cell phone charger vs. standard cell phone charger	690.15	5.70	1.510
Multi-functional alarm clock vs. standard alarm clock	990.03	4.18	1.722
Smart money box vs. standard money box	571.09	4.42	1.251
Strapless flip-flops vs. ordinary flip-flop	329.06	4.24	1.985
Long-lasting mosquito repellent bracelet vs. mosquito repellent	300.82	4.64	1.141

4.3. Stimuli and study procedure

Participants were asked to imagine that they had traveled to Japan or the USA and intend to purchase souvenirs and gifts for friends and families. In addition, they imagined the shopping experience to be fun and many novel and practical items are available. While shopping they found a portable solar cell phone charger (significantly different from a product available in Taiwan), or a multi-functional alarm clock (similar to a product available in Taiwan) at store A. The products' prices were based on pretests and presented in either Japanese yen (portable solar cell phone charger: ¥2300 JPY; multi-functional alarm clock: ¥3300 JPY) or in US dollars (portable solar cell phone charger: \$23 USD; multi-functional alarm clock: \$33 USD). Participants are told to assume they really like the product, but they decide not to purchase anything on the first day of their trip because future purchase opportunities are likely. However, the only place they discover the same product is in the duty free shop at the airport in Japan or in USA on their return trip. The duty-free shop's price is 15% higher than in shop A (the subjects are not told the percentage premium; instead, they are shown the posted prices in Japanese yen or U.S. dollars).

Participants responded on a seven-point rating scale (1 = strongly disagree, 7 = strongly agree) about the difference between the products and their substitutes (standard cell-phone charger or standard alarm clock in Taiwan) as the manipulation check. They indicated their willingness to buy merchandise in the duty-free shop at the airport.

4.4. Results

4.4.1. Manipulation check

The difference between chargers ($M=5.74$) is significantly higher than the difference between alarm clocks ($M=4.14$; $F(1, 172) = 48.81, p < 0.001$); therefore, the product difference manipulations were successful. Participants were asked whether or not they previously traveled to ensure this experience would not moderate the face value effect. Travel abroad experience \times foreign currency interaction was not significant to the purchase intentions ($F(1, 170) = 0.42, p > 0.1$); therefore, both experienced and inexperienced respondents participated in Study 1.

4.4.2. Purchase intention

The results show a significant effect of currency denomination ($F(1, 170) = 9.24, p < 0.01$) and product difference ($F(1, 170) = 10.98, p < 0.001$) on purchase intention. Participants indicated a willingness to buy a product when a great difference exists with the substitute ($M_{\text{large difference}} = 2.87$ vs. $M_{\text{small difference}} = 2.22$) or under LDC conditions ($M_{\text{HDCs}} = 2.25$ vs. $M_{\text{LDCs}} = 2.85$). The 2 \times 2 results confirm H1. No difference exists in purchase intention between currency denominations when the difference between the product and substitute was large ($M_{\text{HDCs}} = 2.68$ vs. $M_{\text{LDCs}} = 3.07$; $F(1, 85) = 1.8, p > 0.1$). When participants found the product price was similar to the substitute, the buying intention was lower $F(1, 85) = 9.14, p < 0.001$) for HDCs ($M = 1.82$) than LDCs ($M = 2.63$). Fig. 1 displays these results.

4.5. Discussion

Study 1 results demonstrate that a difference exists between products and their substitutes when foreign currencies moderate consumer purchase intentions toward product prices. In cases where a large difference exists between products, the participant's buying intentions do not differ in HDC versus LDC scenarios. When the product and substitutes are similar, the participant purchase intentions are much lower in HDC than LDC scenarios. This result suggests that a face value effect only exists when the product's price is not

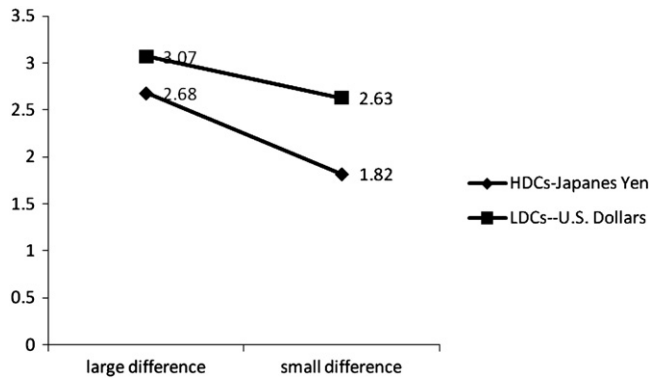


Fig. 1. Interaction of currency denomination and production difference on purchase intention.

very attractive because participants sense a price premium, especially in HDCs situations.

5. Study 2: product availability's moderating effect on the face value effect in product differences

5.1. Objective and hypotheses

Study 1's results support the proposition that people compare both price and product uniqueness in the foreign country with domestic purchases. When travelers realize that the same product may cost more money at the airport's duty-free shop, consumers may consider whether or not they can acquire the same product in their home country. Because people often cannot return to the same scenic place or shop while traveling abroad, this quandary is common for tourists. Consumers are more likely to buy a product unavailable in their home country or if the product is significantly less expensive. Study 2 adds a variable addressing whether or not substitutes are available in the home country—observing the substitute's influence on purchase intention. If the product price is higher than consumers expected, the purchase intention likely is lower unless consumers feel the product merits acquisition. If the product greatly differs from available domestic substitutes, the product likely is more attractive to consumers and the face value effect emerges. The price premium looks smaller for LDCs than HDCs, creating a higher purchase intention. Assuming the product can be brought in their hometown, the attractiveness likely decreases because the price is higher than expected, especially when the product differs little from a substitute. The face value effect emerges in HDCs because the price premium makes the product seem much expressive, leading to a lower purchase intention. Study 2 hypothesizes the following relationships.

H2. When the product is unavailable in their home country, participant purchase intentions are higher when the product differs significantly from substitutes, especially under conditions of LDCs compared to HDCs.

H3. When the product is available in their home country, participant purchase intentions are lower when the product differs little from substitutes, especially under conditions of HDCs compared to LDCs.

5.2. Method

This study uses a 2 (currency denomination) \times 2 (difference between product and substitute) \times 2 (substitute availability in the home country) between-subjects design. The 384 undergraduate students (ages 18–23, $M = 19.15$; 58.4% female) were assigned randomly to one of eight conditions. The domestic substitute product availability was manipulated as follows. The participants were informed that the product will soon be available in their home

country (product available), or the product will never be available in their home country (product unavailable). In addition to the study procedure and the measurements, the foreign currency conditions and the differences within product sets are identical to Study 1.

5.3. Results

5.3.1. Manipulation check

The difference between chargers ($M = 5.4$) is significantly greater than the difference between alarm clocks ($M = 4.4$; $F(1, 382) = 33.99$, $p < 0.001$) suggesting that the manipulation of product differences is successful. In addition, travel experiences do not affect the purchase intention ($F(1, 381) = 0.14$, $p > 0.1$); therefore, both experienced and inexperienced travel participants are included in Study 2.

5.3.2. Purchase intentions

Currency denomination ($F(1, 376) = 25.19$, $p < 0.001$), product difference ($F(1, 376) = 77$, $p < 0.001$), and domestic market availability ($F(1, 365) = 151.95$, $p < 0.001$) mainly affect purchase intention. Two 2×2 interactions, currency denomination \times availability ($F(1, 376) = 16.79$, $p < 0.001$), and product difference and availability ($F(1, 375) = 47.88$, $p < 0.001$) also are found. Most importantly, a three-way interaction significantly affects purchase intention ($F(1, 376) = 17.17$, $p < 0.001$). Before investigating significant three-way interactions, the simple effect of the 2 (currency denomination) \times 2 (difference between product and substitute) were examined for both domestic scenarios of product availability.

Assuming the product will not become available domestically, ANOVA analysis reveals a significant two-way interaction ($F(1, 194) = 8.64$, $p < 0.01$) accompanied by significant major effects of currency denomination ($F(1, 194) = 34.48$, $p < 0.001$) and differences between a product and the substitute ($F(1, 194) = 102.19$, $p < 0.001$). As shown in Fig. 2a, when the product largely differs from the

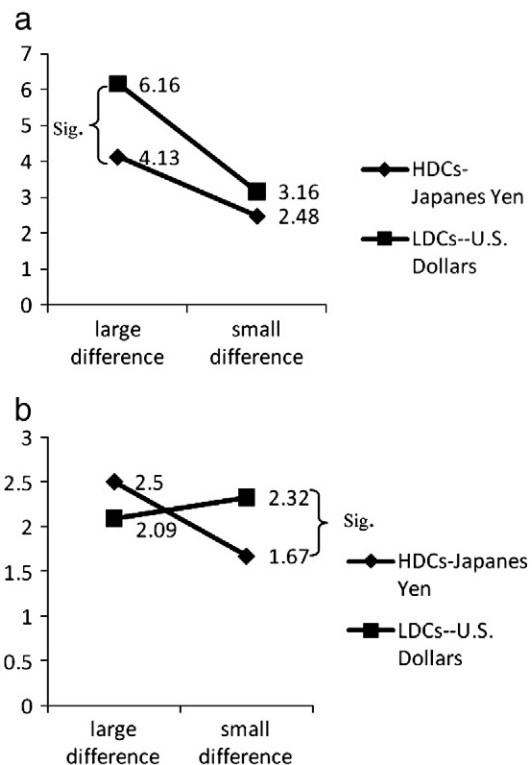


Fig. 2. a. Interaction of currency denomination and production difference on purchase intention under the condition that the product will not be available in the home country. b. Interaction of currency denomination and production difference on purchase intention in a condition that the product will not be soon available in the home country.

substitute, participant purchase intentions are higher in LDCs ($M=6.16$) than in HDCs ($M=4.13$; $F(1, 97)=45.24$, $p<0.001$). This finding is because the product's price premium in high currency dominations seems smaller than for low dominations. When the product is similar to the substitute, the attractiveness is low. Purchase intentions are low and do not differ regardless of LDCs ($M=3.16$) or HDCs ($M=2.48$; $F(1, 97)=3.76$, $p>0.05$). The results support H2.

If the product will soon be available in the home country, the only significant effect is in the 2×2 interaction ($F(1, 182)=9.05$, $p<0.05$). Fig. 2b shows results confirming Study 1. Purchase intention does not differ when a large product difference exists, regardless of currency differences ($M_{\text{HDCs}}=2.5$ vs. $M_{\text{LDCs}}=2.09$; $F(1, 91)=2.66$, $p>0.1$). However, when the product is similar to the substitute, the buying intention of the participants is lower for HDC than LDC scenarios ($M_{\text{HDCs}}=1.67$ vs. $M_{\text{LDCs}}=2.36$; $F(1, 91)=6.81$, $p<0.05$). These results support H3.

5.4. Discussion

This study provides evidence that the difference between products and domestic substitute product availability moderates currency denomination's effect on purchase intentions. When the product cannot be obtained in their home country, and no close substitute exists, consumer's buying intention is higher for LDCs because the price seems less expensive than in the HDC scenario. If a similar, domestic offering likely is available soon, the product becomes less attractive and seems more expensive in HDCs. Purchase intentions are much lower.

6. Study 3: price difference's moderating effect on the currency face value effect in product differences

6.1. Objectives and hypotheses

Study 2 corroborates and extends Study 1 by demonstrating consumers' propensity to spend foreign currency depends on the currency's face value, the difference between products and their substitutes, and the product's availability at home. Study 3 examines price difference's moderating effect between the product and substitutes. Marketing research finds that consumers evaluate the product's given price based on the salience of the different reference standards (Briesch et al., 1997; Winer, 1988). Study 3 proposes travelers make purchase decisions based on the price difference between the product and the substitute product in their home country. If the domestic substitute good's price is higher than the foreign store's offering, consumer buying intention likely is higher even when they know the duty-free shop's price in Japan/USA is more expensive than at any other place—especially for LDC conditions. However, when the domestic substitute price is lower than found in the foreign country store, the product needs not be purchased in the foreign country, especially when features are similar. In this case, the price premium becomes salient and the purchase intention is much lower when the price is in HDCs compared to LDCs. Study 3 hypothesizes the following relationships.

H4. When the domestic substitute product's price is higher than in the foreign country's store, a participant's purchase intentions are higher in LDCs compared to HDCs, especially when the product differs greatly from the substitute.

H5. When the domestic substitute product's price is lower than in the foreign country's store, participant purchase intentions are lower in conditions of HDCs compared to LDCs, especially when the product differs little from the substitute.

This study slightly differs from Study 1 and Study 2. Arguably, the interaction effect observed in Studies 1 and 2 simply could result from product category differences rather than the magnitude of differences between a product and substitute.¹ To rule out this possibility, Study 3 manipulates the magnitude of product differences using a with-subject design (see Hutchinson, Kamakura, and Lynch, 2000).

6.2. Method

Two hundred and twelve undergraduate students (ages 18–25, $M=19.43$; 60% female) are assigned randomly to a 2 (the magnitude of differences between a product and a substitute: high vs. low) $\times 2$ (currency denomination) $\times 2$ (price difference between substitutions) mixed design; the first factor manipulates with-subject and the other two factors manipulate between-subject design. The foreign currency conditions, product sets, procedures, and measures are identical to Studies 1 and 2. This 10-minute session consisted of two shopping scenarios as well as an unrelated study. Participants are told at the session's beginning that the researchers are interested in how multi-tasking affects purchasing decisions. Participants evaluate their purchase intentions of large-difference product sets (phone charger) and small-difference product sets (alarm clock) with a filler task separating those two decisions. The order of the magnitude differences between a product and the substitute are counterbalanced. The filler task was a "count backward" procedure used in previous research to keep individuals cognitively occupied (Carlyon, Plack, Fantini, & Cusack, 2003; Liu, 2008). In the study, participants count backward by 7 from 175 to 105. In Study 3, using the price difference levels (5% or 30%), the domestic substitute product's price is either 5% or 30% higher than foreign market's product (see Callow & Lerman, 2003). Again, participants do not know the premium's percentage, only the prices listed in the foreign currency. A pilot study identified the baseline product prices. Study results suggest that a reasonable price for a portable solar cell phone charger is NTD 690 and NTD 990, respectively (see Table 1). Study participants indicated their willingness to buy a portable solar cell phone charger and functional alarm clock in either five percent premium or in the 30 percent premium conditions.

6.3. Results

6.3.1. Manipulation check

The difference between the chargers ($M=5.54$) is significantly higher than the alarm clocks ($M=4.43$; $F(1, 422)=55.18$, $p<0.001$). Again, travel abroad experiences did not affect the purchase intention ($F(1, 422)=1.5$, $p>0.1$); therefore, both experienced and inexperienced travel participants are included.

6.3.2. Purchase intentions

A $2 \times 2 \times 2$ repeat measures ANOVA reveals a significant effect of product difference ($F(1, 208)=65.57$; $p<0.001$) on purchase intention. This result suggests that the purchase intentions differ between high and low magnitudes of differences between a product and a substitute. However, no other main effect or 2×2 interaction effect is found. Nevertheless, the results confirm the predicted interaction effect of currency denomination and price differences between products and their substitute, as expected under the difference products ($F(1, 208)=26.31$, $p<0.001$). To investigate the significance of the three-way interaction, the simple effect of 2 (currency denomination) $\times 2$ (difference between product and substitute) is examined for both high-price premium and low-price premium conditions.

In high-price premium conditions, a 2×2 repeat measure ANOVA reveals a significant two-way interaction ($F(1, 113)=22.49$, $p<0.001$),

¹ The authors thank the reviewer to bring out this question.

accompanied by the significant main effects of the currency denomination ($F(1, 113) = 16.71, p < 0.01$) and the difference between the product and substitute ($F(1, 113) = 35.99, p < 0.001$). The purchase intention significantly differs only in LDCs condition ($F(1, 51) = 59.29, p < 0.001$) but not in the high HDC condition ($F < 1$). Fig. 3a shows participants' purchase intentions are greater for LDCs ($M = 6.37$) than HDCs ($M = 4.08$). The large difference product set ($t(113) = -6.53, p < 0.001$) emphasizes the face value effect. For the small difference product set, the purchase intention was similar ($t(113) = -0.33, p > 0.01$) for both LDCs ($M = 3.92$) and HDCs ($M = 3.79$). H4 is supported.

In the low price premium condition, a 2×2 interaction also is found ($F(1, 95) = 6.64, p < 0.05$), accompanied by the significant main currency denomination effects ($F(1, 95) = 8.68, p < 0.01$) and the difference between the product and substitute ($F(1, 95) = 30.5, p < 0.001$). Purchase intention varies between large and small difference product sets only in HDC conditions ($F(1, 42) = 46.3, p < 0.001$), not in LDC conditions ($F(1, 53) = 3.8, p > 0.05$). Fig. 3b shows identical results to Study 1 and Study 2. Purchase intention does not differ in a set with large differences regardless of whether or not the participants were in a HDC or in an LDC scenarios ($M_{\text{HDCs}} = 3.07$ vs. $M_{\text{LDCs}} = 4$; $t(95) = -0.71, p > 0.1$). However, when the product has a close substitute, the participant's buying intention is much lower in a HDC versus a LDC scenario ($M_{\text{HDCs}} = 1.84$ vs. $M_{\text{LDCs}} = 3.31$; $t(95) = -4.07, p < 0.001$), supporting H5.

6.4. Discussion

Study 3 provides evidence that product and price differences moderate the currency denomination's effect on purchasing intention. When people perceive a substantial product difference and a large price difference, their purchase intention is greater in LDCs than in HDCs because the product seems less expensive. When people perceive that the product and the substitute are similar, their purchase intention does not differ regardless of condition (LDC or HDC). In other words, no currency face value effect is evident. In contrast, when the price premium is small, the product does not seem to

be very attractive to the respondents. The purchase intention is much lower, especially in HDC conditions.

7. Conclusion

The experiments outlined in this paper focus on the face value effect and differences between products and their substitutes. How do these variables affect purchasing intention? When consumers face a situation in which products are priced higher than in other stores, they cannot go back to the first store, the tourists only have one chance to buy this product. Their purchase intention is higher in low denomination currencies (LDCs) because the increase in the price range looks smaller than in high denomination currencies (HDCs). Despite purchase intention differing little when the product difference is large, purchase intention decreases substantially in HDCs when the product difference is small.

In addition, the results show that for product differences, availability moderates the effect of the currency face value effect. When the product is unavailable domestically, purchase intention is higher in LDCs compared to HDCs. Intention increase when the substitute product differs greatly. When a close substitute product is available domestically, the purchase intention is much lower in HDCs than in LDCs. Similarly, the price difference between the product and the substitute affects the currency face value effect in product differences. When the price difference is large and the product and substitute differ greatly, the purchase intention is higher in HDCs than in LDCs. The currency face value effect disappears when the price difference between the product and the substitute is small. However, when the price difference is small, the face value effect only exists when the product difference is small. The purchase intention is much lower in HDCs than in LDCs because the price premium looks high in HDCs.

The findings have strategic implications for pricing in regional zones, both on the Internet and for international tourism. Research shows consumers treat and use foreign currency differently than their home currency because they have difficulty converting foreign money values (Jonas, Greitemeyer, Frey, & Schulz-Hardt, 2002; Raghuram & Srivastava, 2002). In addition, consumers shopping in a foreign environment evaluate the product's price based on the foreign currency denomination's relationship to their own (Callow & Lerman, 2003; Raghuram & Srivastava, 2002). Although the real prices and objective amounts of money for customers remain similar, exchange rate conversion could be a significant psychological difference for people confronted with unfamiliar currency. The results suggest that consumers shopping abroad consider whether or not they can obtain a similar product at home. Close substitutes at home (or not) affect spending behavior. This behavior is true particularly when they believe the price to be high. These findings help understand consumer behavior using foreign countries.

As for the managerial implications, the findings aid understanding of how the face value effect influences a consumer's product evaluation. Since the currency denomination affects consumer-spending behavior, businesses should eliminate the currency face value effect by offering prices in different currencies, especially in HDCs. In addition, the results suggest that when a company prices items in another country, they should price as little as possible in HDCs in order to avoid money illusions.

Finally, when focusing on temporarily used foreign currencies during travel, future research could examine whether consumers who move from a low denomination country to a high denomination country (or vice versa) adopt the face value of the currencies. In addition, the scenarios used in this research only consider consumers traveling abroad. Because the Internet has become ubiquitous, many companies have international websites offering global product delivery. Future studies could build on this research's experimental design by including an international online shopping scenario.

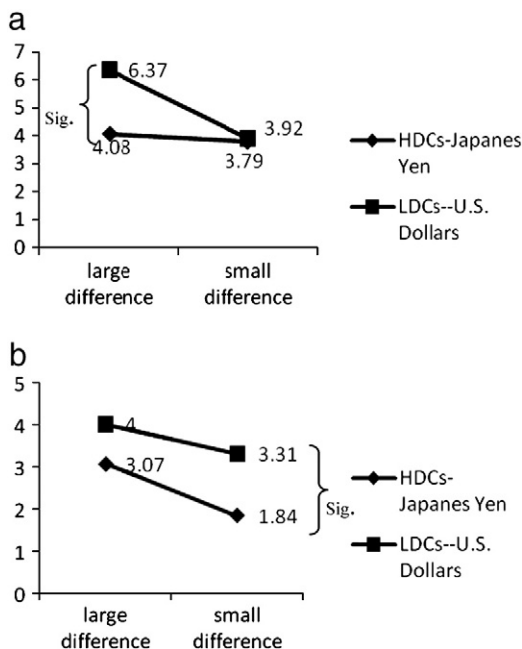


Fig. 3. a. Interaction of currency denomination and product difference on purchase intention in a high-price premium condition. b. Interaction of currency denomination and product difference on purchase intention in a low-price premium condition.

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