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Relationship between Shopping Streets and Community Currency Circulation
A Case Study of the City of Musashino, Tokyo, Japan

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0. Introduction

Community currencies (CCs) in the form of redeemable coupons (hereafter called "CC coupons") are currently gaining popularity in Japan. There are several types of coupons in Japan. Gift coupons are issued by various department stores or companies. They are usually used as gifts for special persons. They include beer coupons, book coupons and so on. Local coupons (or gift certificates) with a premium are usually issued by Chamber of Commerce in Japan. Local governments often bear expense of such a premium by using tax money to lift the local economy. In 1999, merchandise coupons were also issued by the Japanese central government to the heads of households who have children under 15 years old and the people aged 65 or older who meet certain requirements. They were introduced to stimulate consumers' demands and escape from prolonged depression. These coupons in general have expiration dates. Consumer's willingness to buy in the community was supposed to be encouraged by putting a premium on the coupons and setting expiration dates.

This type of community currency (CC) is adding vitality to local communities by its use in both commercial and non-commercial transactions, bridging the gap between volunteer activities and the economic activities of local shops. They were introduced in an attempt to overcome the problems encountered by earlier CCs used in Japan. There are several previous researches that have examined the economic effects of CC coupons. Coe (1938) noted how their use in large shops and redemption would become obstacles to their circulation. Nishibe (2005, 2006a), Kichiji=Nishibe (2008) and Yamazaki (2008) verified the economic effects of CC coupons by considering their redemption, turnover and velocity of circulation. They also traced the circulation paths of CCs, showing what kinds of transactions they mediated and how they came to circulate within the community (Nishibe, 2008; Kichiji=Nishibe, 2008; Yamazaki=Yahagi, 2009). Nishibe and others showed how the use of CC coupons for non-commercial transactions produced created new demands for a local economy by the following successive uses for commercial transactions.

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It had been known in case of “Eco-money” only usable for non-commercial services that participants could not help but to store up CCs they received in exchange for their non-commercial volunteer aids because they could neither find any other services they want nor use them at local shops. This problem prevented Eco-money from circulating smoothly.

CC coupons that allow only shops to exchange for cash have been adopted in Japan in order to solve the problem. But, it seems to be another problem that in the case of CC coupons, local shops, instead of using them for other local shops or non-commercial services, are apt to redeem CC coupons immediately after they receive them. This is mainly because most shops allegedly need cash to buy merchandises from outside their own community. Thus inclination of local shop to redeem CC coupons as soon as possible hinders active circulation of CC coupons.

When this happens, the relationship between shops’ comprehension and behavior, and the circulation of CCs becomes crucial. In order to make redeemable CC coupons successfully circulate in its community sphere, shops need to comprehend the purpose of the CC, and commit themselves to take a positive stance on circulating them wherever possible, rather than just redeeming them.

This article will try to show the effects of shops’ comprehension and behavior on CC circulation. Section 1 reviews the history and development of CC in Japan. Section 2 gives an outline of the CC coupons introduced in the Central District of Musashino City, Tokyo (hereafter called the Central District). Section 3 analyses the results of a circulation experiment, and examines the relationship between shops’ comprehension and behavior, and the CC circulation. Section 4 coordinates the results of the analysis and draws conclusions on the significance of the CC coupons, and finally notes issues that remain to be studied.

1. The history and development of CCs in Japan

1-1 The appearance of various CCs by 21st century

In early modern Japan, there were a number of systems resembling CCs, such as “Yui” and “Kou”. The former was a kind of mutual aid system that lends and borrows labors on the basis of each other’s promises within village and other communities. The latter was a means for pooling not only labors but also monies or goods to use them where and when needed. Moreover, Han, the domains controlled by feudal lords used to issue “Hansatsu” in order to solve local financial difficulties in the Edo period (1603-1868). But they were abolished and consolidated into “yen” (the Japanese official currency), but the “Yui” and “Kou” type of systems have survived in a small way.

In recent years, a variety of CCs have appeared since 1970s. The first to draw attention were "Volunteer Labor Bank" and "Eco-money"[4]. In 1973, Shoko Mizushima formally established "Volunteer Labor Bank". Participants received in-house credits instead of wages in "yen" as payment for their volunteer work. One hour of volunteer work was calculated as one point, and the points amassed by a participant could be exchanged for labor among themselves. This activity is similar to mutual assistance systems such as "Time Dollars" which were later set up, mainly in America (Lietaer, 2004, p.4). A number of time-deposit style CCs later appeared, inspired by the "Volunteer Labor Bank" notion[5]. Some foreign CCs also became known in Japan, such as the Canadian "LETS (Local Exchange Trading System)" and the U.S. "Time Dollars" and "Ithaca Hours", and these greatly affected the implementation of CCs. An official of the former Ministry of International Trade and Industry, Toshiharu Kato, proposed the concept of "Eco-money", modeled on the idea of "LETS" and "Time Dollars". "Eco-money" circulates within districts, re-evaluating various environmental, social welfare, educational, and cultural values (Kato, 2001, p. 23). The use of "Eco-money" has spread throughout Japan, drawing great interest as a tool for revitalizing local communities. From the 1990s up to the beginning of the 21st. century, Japan experienced a boom in the appearance of CCs[6]. The CCs that appeared in Japan can be classified into three main types, according to their purposes (Table 1). First, there are "Volunteer Labor Bank" and "Eco-money" type of CCs. This type is used as a form of mutual assistance and to promote social interchange. Secondly, there are CCs for supporting projects. This type is issued in order to support various local community projects along the line of "Community Way". Thirdly, we have the CCs which aim to act as an economic stimulus. This type is used among businesses and shops to invigorate trade. Thus we can see various types of CCs co-existing in Japan today.

[4] See Izumi (2006) and Lietaer (2004) on the early CCs in Japan.
[5] Later, time deposit type of CCs, called "Fureai Kippu" system by Tsutomu Hotta, the Director of the Sawayaka Welfare Foundation spread domestically in Japan.
[6] The three reasons why CCs were noticed were as follows: 1) The Hanshin earthquake created momentum for more active civic movements, 2) the country fell into long-term recession following the bursting of the bubble economy and the Asian currency crisis, and 3) NHK, the Japanese public TV broadcaster, put out a documentary on author Michael Ende which dealt with the issue of money [Ende's will].

Table 1. Classification of community currencies.

Bases	Objectives	Case examples
Volunteer	To promote mutual assistances and social interchanges	Eco-Money (Japan) Time dollar Volunteer Labor Bank
Project	To support such various local community projects as town development using CCs	LETS Earth day Money (Japan) Atom Currency (Japan) Chiemgauer
Business	To invigorate commercial trades among local businesses and shops	WIR BANK RGT Ithaca Hours

Note: This table was made by reference to Nishibe (2004, pp. 24-28).

1-2 The appearance and development of CC coupons

In around 2002, the central government proposed a variety of policies related to CCs that were taken up in many parts of the country (Nishibe, 2006b). One of those was a system of special zones for structural reform and aimed at relaxing regulations in order to revitalize a district. There are also other instances of central government and local ones in Japan supporting attempts to establish CCs, with offers of subsidies and platforms using computer network systems. Under such circumstance, CC coupons were first issued in the Rubeshibe Town, in Hokkaido. The local coupons that had been in use until then were exchanged for cash immediately after use, making it impossible for them to circulate as a currency and thereby to create additional demand that would promote ongoing purchasing activity (Nishibe, 2004, p. 28). Then local coupons that incorporated the idea of a CC appeared. However, then the law did not clearly prohibit multiple circulations of local coupons before redemption, and so Rubeshibe Town applied for being adopted as economic special zones and requested the government for reconfirmation of multiple circulation. As a result, the regulations were relaxed and the issue of multiple circulation local coupons was permitted.

Furthermore, in March 2005, the Osaka Healthy Community Creation Special Zone and the Kitakyushu Community Currency Special Zone were established as special zones for CC purposes, and regulations regarding the issue and circulation of CC were relaxed. As a result, three types of CC coupon came into being: “Genki” in Neyagawa City, and “Ippo” in Suita City, both in Osaka; and “Orion” in the Yahata West district of Kitakyushu. In 2007, the special measures regarding regulations were implemented

nationwide, enabling awareness of CC coupons across the nation. In response, the village of Sarabetsu in Hokkaido set up an incorporated nonprofit organization and issued “Sarari”. This was usable not only for volunteer activities and local shopping but also for payment of public utilities and facilities as well as local taxes.

1-3 Special features of CC coupons

The special features of CC coupons are that they are multiple circulation local coupons for use within a local district for both commercial and non-commercial transactions. They can be used for volunteer dealings, buying goods in shops, and paying for administrative services. They were introduced in order to overcome the limits of the previously used CCs, local coupons and stamps. Unlike those earlier local coupons and stamps, they need not be cashed in immediately after use, but instead can be re-circulated. This type of CC also differs from the “Eco-money” type of CC in that their sphere of use is not limited to non-commercial transactions, but can also be used for commercial transactions (Nishibe, 2006a, p.338). This mechanism is known as “Double Triangle System [DTS]” (Nishibe, 2004a, 2008, Kichiji=Nishibe 2008).

With DTS, “CC circulation in non-commercial transactions is pulled along by CC circulation in commercial transactions, thus the mechanism allows for a smoother circulation of the CC, and is an attempt to overcome the difficulties of CC stagnation and continuity in transactions” (Nishibe, 2008, p. 291). The DTS forms a link between commercial and non-commercial transactions, broadens the realm of circulation of the CC, and invigorates volunteer activities, mutual assistance and economic activities. The “yen” and local coupons are not ordinarily used in non-commercial transactions such as volunteer activities and mutual assistance, whereas CC coupons are used in such transactions, making their range of possible use more varied. As a result, CC coupons form a link between citizens who undertake non-commercial transactions and businesses who undertake commercials ones, thereby fulfilling a role of building social capital. Table 2 shows the differences between CC coupons, “Eco-money” type of CCs, local coupons, and stamps.

Table 2. The differences among CC coupons, "Eco-money" type CCs, local coupons and stamps.

	CC coupons	"Eco-money" type of CCs	Local coupons	Stamps
Transaction types	・Commercial ・Non-commercial	Non-commercial	Commercial	Commercial
How to get	・Purchase ・Volunteer work	Volunteer work	Purchase	Giveaway Promotion
How to use	・Shop ・Volunteer work	Volunteer work	Shop	Shop
Circulation	Multiple	Multiple	Once	Once

2. Outline of the CC in Central District of Musashino City

2.1 Background to the introduction of the CC

The preceding section looked at the history and development of CCs in Japan, and briefly documented the process-giving rise to CC coupons. Given that CC coupons have attracted such attention in recent years in Japan, this section will focus on the case of Musashino City in Tokyo. Musashino City has an abundance of commercial establishments and educational institutes, with the tertiary sector providing the main economic support. The financial capability index, which shows the strength of the city's financial base, is very high, confirming that Musashino is an affluent city. However, the proportion of the elderly is on the increase. Central District, which is the focus of this article, has several merchants' associations, and fully engages in festivals and other local activities. And yet the drawn-out recession together with the opening of large-scale stores has meant that the shopping streets in Central District are gradually going into decline. There are three background issues relating to the introduction of the CC.

The first is the impasse in trade stamps. Trade stamps came to be issued throughout Japan as a way of retaining customers and adding vitality to shopping districts. They were important tools for creating a bond between consumers and local shops. Musashino Central District Shopping Streets Federation (hereafter called Federation) implemented trade stamps as a part of its consumer services. The affiliated businesses which dealt in the stamps gave customers one stamp for every 100 yen spent.

Customers then stuck the stamps on to the card provided[7], and when they had amassed 350 stamps, they could use them for 500 yen's worth of purchases[8]. Furthermore, the stamp cards could be saved up and exchanged for a variety of benefits. The stamps not only encouraged consumers to buy more, but also at the same time increased purchase rates in the affiliated shops, and served to keep consumption within the district. However, trade stamps are on the decline due to the steep drop in sales turnover and in the number of affiliated stores. Consumer interest in stamps has also waned, and stamps no longer provide the means for bonding between consumers and the shopping district.

The second issue is the weakness of links between different groups. Various groups are undertaking local activities in Central District, but there appears to be no strong links between them. Such links are necessary to energize the community, but they are inadequately forged.

The third problem is the aging of society and the decline of mutual assistance. An aging society brings with it a host of problems. Senior citizens find it increasingly difficult to get out to the shops as they get weaker on their legs. With few opportunities to get out and about, the feeling of isolation increases, and they become more and more estranged from their local communities. Relations with local residents also become weaker, and mutual assistance dwindles.

Central District is experiencing just the types of problems outlined above. These can only be resolved with co-operation of the groups and local residents. A CC has the potential to bring about co-operative relations between the various groups and local residents, thus strengthening the social capital. Groups and local residents can use CC to add vigor to shopping streets, accommodate an aging society, and promote inter-group links and mutual assistance. Federation decided to introduce CC as a way of exploiting this potential.

2.2 The design and circulation scheme of Muchu

This section will outline the design and the circulation scheme of the CC introduced into Central District. The design is shown in Figure 1. Under the name Muchu (hereafter, Mc), 50 Mc is equivalent to 50 yen. Mc was introduced in order to promote inter-group links and mutual assistance, and thereby invigorate the local community and the local economy.

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[7] Information about stamps is based on materials kindly provided by Federation.

[8] They could also be peeled off the stamp card and used in 100 yen units. Since customers received one stamp for every 100 yen they spent in an affiliated shop, spending 35,000 yen would bring them 350 stamps. That has a value of 500 yen, making the dividend to the customer around 1.4%.

An outline showing how its experimental circulation was implemented is shown in Table 3. There was a two-phase implementation planned, over a period of around six months to a year, starting in 2008. 11 shopping streets took part, with some 140 affiliated shops. The total issue was a first phase of around 3.7 million yen, and a second phase of around 2.7 million yen. The amount of money redeemed came to around 3.5 million yen and 2.5 million yen respectively in the first and second wave, meaning that more than 93% was eventually redeemed. The first issue was carried out by NPOs, the second by local merchant's associations.

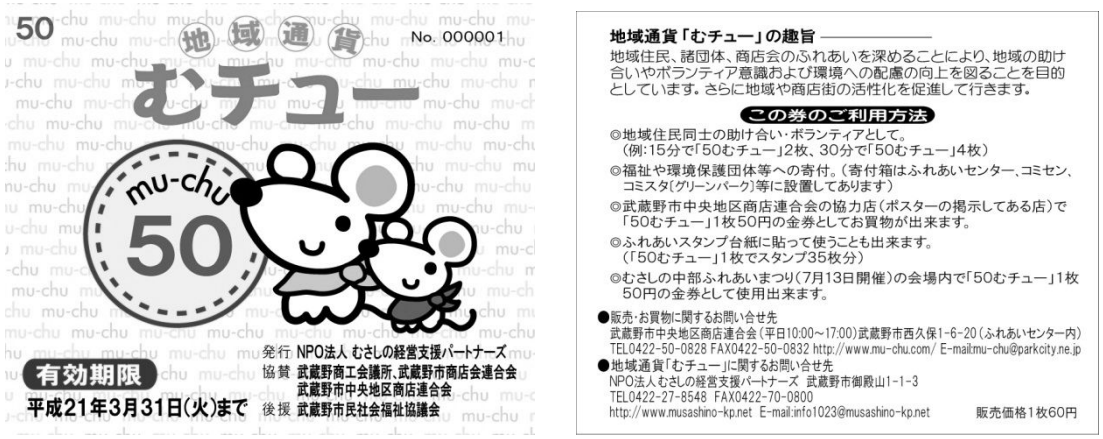

Figure 1. The front (left side) and the back (right side) of Muchu.

Table 3. An outline showing how its experimental circulation was implemented.

	First-stage	Second-stage
1. Experimentation period	07/2008-03/2009	05/2009-03/2010
2. The total number of affiliated stores	145	141
3. The total amount of CC in circulation	¥3,770,200	¥2,735,400
4. The total amount of CC redeemed	¥3,513,100	¥2,556,600
5. Rate of CC redeemed	93.2%	93.5%
6. Issuers of CC	NPOs	Local merchants' associations

Mc was issued by 2 methods. Table 4 shows the details of the total amounts issued. In the first method, Mc was bought in by the various groups and merchants' associations, and distributed to local residents as rewards for community activities and giveaway promotions from shops. The community activities included 1) help with festivals, 2) help with other events, 3) communal cleaning, 4) flower growing activities, 5) collecting the caps from plastic bottles, and 6) forgoing the use of plastic carrier bags[9]. In this circulation experiment, the various groups and merchants' associations bought Mc at a rate of 60 yen per coupon, and distributed them to the volunteer workers and other recipients[10]. Federation also gave away some Mc to groups and residents as a form of advertising. In the second method, local residents bought Mc directly and used them in the shopping streets. In this case, Mc came with a 20% premium for a limited period[11]. A local resident buying 1,000 yen's worth (20 coupons) of Mc, received a premium of 200 yen (5 coupons).

Table 4. The details of the total amounts issued.

		First-stage	%	Second-stage	%
Way of issue	1.Rewards for community activities or Giveaway promotions	¥957,500	25.4	¥1,427,900	52.2
	2.Donation	¥555,000	14.7	¥0	0.0
	3.Purchase by consumers	¥2,257,700	59.9	¥1,307,500	47.8
	Total	¥3,770,200	100.0	¥2,735,400	100.0

Next, we come to how Mc was used. Local residents who had received or bought Mc used them to pay for mutual assistance, as donations, for shopping streets, for the community bus, and at events such as festivals. Mc could also be stuck on to the stamp

[9] When a customer declines to take a plastic carrier bag at the checkout, they receive the point, and when a certain number have been amassed, they can be converted into CC. In Japan, the 'no plastic bags' movement is booming from the environmental conservations standpoint.

[10] Since the face value of the CC is 50 yen, the 10 yen difference goes to running costs. That is to say, for every coupon bought by the groups and merchant's associations, 10 yen is contributed to running costs.

[11] There are no differences in function between these and the previous issues, the only distinguishing feature being that the character *toku*, meaning 'special' is printed in a red circle in the top right of the coupon.

cards. Shopkeepers who took Mc also sometimes used them in other shops. Only affiliated shops in principle were allowed to redeem Mc they had taken for yen. Residents and shops could also donate Mc. The donations received were converted into yen and given as relief money to victims of disasters, funds for guide dogs for the blind, and social welfare councils. Mc had a time limit on their validity. The distribution flow of Mc is set out in figure 2. The arrows show the direction of the flow. Mc re-circulated again and again among the groups and residents, eventually being redeemed for yen by shops or the company running the community bus.

In these ways, Mc, issued as CC coupons, has been bearing fruit. However, problems have also appeared. In particular, many of Mc given as reward for activities were redeemed as soon as they had been used in shops. The next section investigates the problem of shops redeeming Mc from the standpoint of the shops' comprehension and behavior.

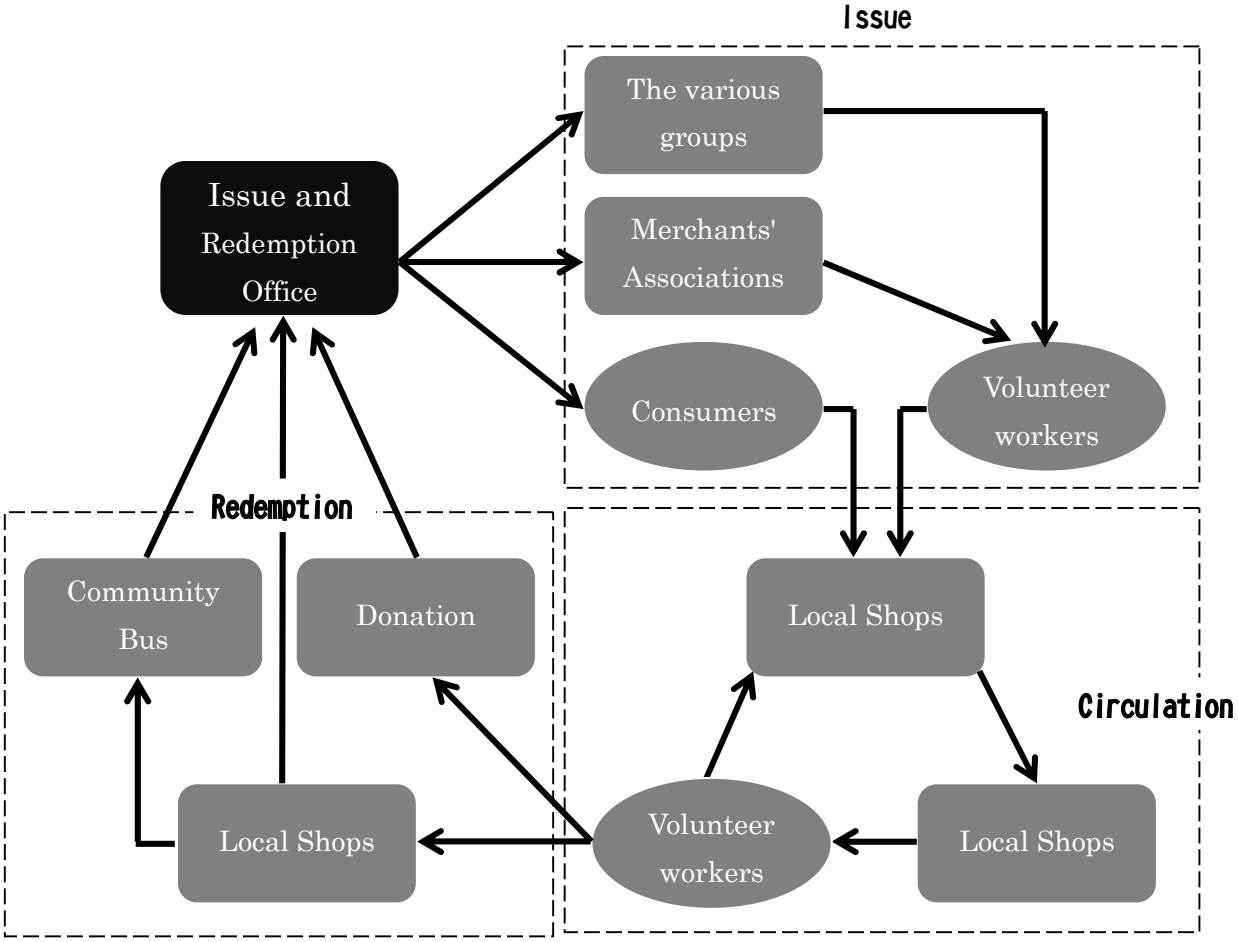

Figure2. The circulation flow of Mc.

3. Issues arising from the experimental circulation of CC

3-1 Issues

Some Mc were given as gifts and rewards for community activities. These were then used mainly in local shops and for the community bus. Kurita focused on the consciousness and behavior of general local residents, and ascertained the effects of introducing Mc. According to Kurita (2010), Mc gradually brought about positive effects after being issued in the form of CC coupons, transforming both the consciousness of inter-group links and also consumer behavior. However, there was one big problem with Mc: the shops immediately redeem Mc. Many of the coupons given to and bought by local residents were used in the shopping streets and then redeemed（Table 5）. Mc received by shops could have been used in other shops, given as a reward for mutual assistance, used for the community bus or given as a donation, but many of Mc issued ended up being redeemed even before the expiration date of it（Table 6）.

Table 5. The redemption rate of Mc by shops.

Implementation period	The redemption rate of Mc by shops (%)
First-stage	98.4
Second-stage	97.7

Table 6. The redemption rate of Mc even before the end of the experimentation.

Implementation period	The redemption rate of Mc even before the end of the experimentation (%)
First-stage	46.8
Second-stage	66.6

From this we can see that the shops' comprehension and behavior exert an effect on the circulation of Mc. For the CC coupons to circulate in multiple times, the shops need to be fully aware of the significance of the CC and the ways to use it, and to make best use of them accordingly. If a shop uses Mc as gifts and in other shops, then that value remains in the community. But when a shop redeems the Mc for yen, then it is lost from the local community. It is therefore important for promoting circulation that shops try to

refrain from redeeming the coupons but instead re-use them[12]. However, earlier research has not adequately taken up this issue, which led us to believe that it is necessary to analyze the effects of shops' comprehension and behavior on the circulation of Mc. The next section investigates the relationship between shops' comprehension and behavior and the circulation of CC coupons, focusing on the results of Mc. Some problems are also brought to light.

3-2 Survey method

To carry out the research survey mentioned above, the Central District Shopping Streets were selected for doing face-to-face questionnaires and interviews. Shops where Mc had been accepted were targeted, and asked about their comprehension of Mc and their ways of using it. There were 106 shops where Mc had been accepted through either the first or second circulation phase. Of those, 84 agreed to take part in the survey. The survey asked about comprehension of Mc, whether or not it was redeemed for yen, and how it was used. To investigate the level of comprehension of Mc, six of Mc's features were asked about. There were also questions about changes after the introduction of Mc, together with opinions and demands relating to Mc. The interviews were in open-ended format. The survey was carried out in two stages in October and November 2010.

3-3 Results

3-3-1 Degree of comprehension of Mc

In order to survey the degree of comprehension of the CC, subjects were asked if they knew about the features of Mc. For each of six features that a subject knew about, 1 point was given, making a maximum of 6 points. The six features of Mc are as follows: 1) Mc can be used as reward for volunteer help work, 2) Mc can be donated to welfare and environment protection groups, 3) Mc can be used in affiliated shops, 4) Mc can be used at festivals and other events, 5) Mc can be stuck on to stamp card, 6) Mc can be used in multiple times within the district without having to be redeemed. Table 7 shows the averages and standard deviations for the levels of Mc comprehension. Table 7 shows the overall comprehension levels and the levels for each of the component features.

The overall comprehension level average was 4.83. Given that the maximum score was 6, we can see that the main features of Mc were to some extent comprehended. So what about the individual features? Table 7 reveals that shops comprehend the possibility of re-circulating Mc as a volunteer activity reward, in affiliated shops, and at

[12] This problem also arose in the 1930s with the Prosperity Certificates issued by the Canadian province of Alberta. See Coe (1938).

festivals. The other two features, donation and stamp card use was not well known by shops. In other words, despite being comprehended to some extent, there was some variation across features.

Table 7. The averages and standard deviations for levels of comprehension of Mc.

	Mean	SD
The overall comprehension level (0,6)	4.83	.82
Each of the component features		
1. Usable as reward for volunteer help work（0,1）	.83	.38
2. Usable as donation（0,1）	.60	.49
3. Usable in affiliated shops（0,1）	.99	.11
4. Usable at festivals and other events（0,1）	.87	.34
5. Usable as a stamp card（0,1）	.69	.47
6. Usable in multiple times（0,1）	.86	.35

3-3-2 Level of use of Mc by shops

The next item to be surveyed was whether or not shops reused Mc. Table 8 shows whether shops that accepted Mc reused some of them instead of redeeming all of them. 58.3% of shops redeemed all of Mc received. 41.7% reused all or part of Mc received. This rate of reuse is relatively high compared to other CC coupons in Japan. For example, the rate of reused CC coupons in the first experiment of Tomamae-cho, in Hokkaido was around 19.5% (Nishibe, 2005; 2008, Kichiji=Nishibe, 2008). Thus, unlike other local coupons, the high rate of Mc re-circulated inside the community instead of being redeemed immediately after receipt.

Let us see what shop reuse Mc for. Table 9 details the ways of reuse made by shops of Mc received. Calculations were made as follows: if shop A had three Mcs and reused the first Mc in shop B, the second one in shop C, and the third one for the community bus, these were counted as Mc having been used twice in shops and once on the community bus. In this case, the number of Mc used amount to three times regardless of the amount of Mc used. From table 9 we can see that 88.6% of Mc was reused in shops. Thus the proportion of Mc is circulated in multiple times as if it was a CC to bring about consecutive transactions, which leads to a knock-on effect similar to so-called a

"multiplier effect" to create effective demand. On the other hand, 58.3% of shops redeemed all of Mc received. If those shops failed to adequately understand the significance of Mc, then they would redeem all Mc received straight away. It could be that differences in the level of comprehension of the CC affected levels of its reuse. There could be differences in the levels of comprehension of Mc between the group who reused some Mc and the group who redeemed all Mc, which could have had an effect on the circulation. The next section looks at whether there is in fact such a difference between the reuse group and the redemption group. It then investigates the relationship between comprehension of the CC and its redemption.

Table 8. Rate of reuse of the MC by shops.

Behaviors of shops	%
Redeem all of Mc received	58.3
Reuse all or part of Mc received	41.7
Total	100.0

Table 9. The use made by shops of their MC.

Use Route	The number of times
1. Local Shops	47
2. Community Bus	2
3. Donations	2
4. Gifts	2
Total	53

3-3-3 The relationship between comprehension of CC and redemption

Table 10 shows the rates of the number (26) of Mc reuse shops in the total number (53) of shops of the group with above average comprehension of Mc, and the rate of the number (8) of MC reuse shops in the total number (30) of shops of the group with below average comprehension[13]. The group with higher comprehension of Mc has higher reuse

[13] We could get the information of 84 shops about redemption, but one of them refused to answer on the comprehension of CC for personal reasons. As a result, the relationship between shop's comprehension and their redemption was analyzed on the basis of the data of 83 shops here.

rate (49.1%) than that (26.7%) of the group with lower comprehension. The difference (22.4%) between the rates of use of the two groups is statistically significant ($p<.05$). Therefore, the group with the higher comprehension of Mc tends to reuse it in a positive manner, while the group with lower comprehension tends to redeem it. So we can ask which features of Mc the redemption group inadequately comprehended. Table 11 shows the differences in comprehension levels for each feature between the reuse group and the redemption group. There was no great difference between the two groups in their levels of comprehension of Mc's usability 1) as reward for voluntary activities, 3) in affiliated shops or 4) at festivals and other events. But there was a great difference between two groups in their levels of comprehension of its usability 2) as donations, 5) as the stamp card and 6) in multiple times. With regard to these three items, the reuse group had significantly higher comprehension levels than the redemption group. Remarkably, the difference (24.5%) between the two groups in comprehension of 6) Mc's usability in multiple times within the district is statistically significant ($p<.01$). This is particularly important. If a shop comprehends that Mc can be used in multiple times, it would not possibly redeem all Mc it received, but reuse at least some of Mc, whereas complete ignorance of this feature would leave redemption as the only option. According to Table 7, although Mc's usability in multiple times is widely known, analysis of the data when broken down into two groups reveals that the group who redeemed all of Mc received has a relatively low comprehension of this fact (Table 11). This means that among those who redeemed all of their Mc, there are some who do so in ignorance of the fact that the currency can be circulated in multiple times.

Table 10. The proportions of MC reuse in the group with above average comprehension of Mc and the group with below average comprehension.

	The group with above average comprehension (%)	The group with below average comprehension (%)	Difference (%)	p-value
The rates of use	49.1	26.7	22.4	.046**
N	53	30		

Note: ***p-value<.01; **p-value<.05; *p-value<.1, two-tailed test.

Table 11. The differences in comprehension levels for each feature between the reuse group and the redemption group (%).

	The reusing group	The redemption group	Difference	p-value
Each of the component features				
1. Usable as reward for volunteer help work	88.2	79.6	8.6	.462
2. Usable as donation	79.4	46.9	32.5	.006***
3. Usable in affiliated shops	100	97.1	2.9	.853
4. Usable at festivals and other events	88.2	85.7	2.5	.997
5. Usable as a stamp card	79.4	61.2	18.2	.079*
6. Re-usable multiple times	100	75.5	24.5	.005***
N	34	49		

Note: ***p-value<.01; **p-value<.05; *p-value<.1, two-tailed test.

4. Discussion and implications

The CCs in Japan have experienced their peculiar process of evolution. At first, the voluntary based CC called "Eco-money" had gained popularity among community activists. They were introduced to develop mutual support among people who lived in the same community. However, since their sphere of use was limited to such non-commercial transactions as volunteer services and mutual aids, they could not gain broader use routes. As a result, the people who did not need to get mutual support from others by using the currency received tend to hoard it without being able to find another use except non-commercial transactions. To overcome this problem, CCs that are usable not only for volunteer services, but also in local shops or for payment of public utilities have emerged and become widely popular in Japan. Since local shops need to stock up with more or less merchandises from outside the community, it was reasonable to make CCs redeemable for local shops. A new type of CC in the form of coupons has thus evolved in order to overcome the weakness and succeed the strength of previous ones.

In this article, we have expounded the background to the appearance of CC coupons in Japan, focused on the example of Musashino City and its experimental circulation of Mc, and detailed its implementation. We have also examined the issues surrounding CC coupons. The most distinctive feature of CC coupons is redeemable for yen and usable

for both commercial and non-commercial transactions. But once CC becomes redeemable in this way, the majority should finally be used in local shops and redeemed by the end of expiration date. As a matter of fact, not negligible shops are inclined to redeem them immediately.

In the last section, we demonstrated that there is the statistically significant difference in the rates of reuse between the group with above average comprehension of Mc and the group with below average comprehension of Mc, that there is also the statistically difference in comprehension levels of Mc between the reuse group and the redemption group, and that there is the statistically significant difference in the comprehension of such each feature of Mc as usability in multiple times between the reuse group and the redemption group. We presume from the results thus obtained that local shops' comprehension of the features and significance of Mc would eventually have a great influence on such their behaviors as either reuse or redemption of Mc and as a result on its average turnover. The cause of the problem might be that it is hard for shops to recognize the essential difference between CC coupons and other coupons such as local coupons or merchandise coupons. For, since CC coupons are redeemable just as other coupons, shops without interest in CCs often misconceive that both of them are the same as mere "money".

As a result, we have concluded that there is a fear that shops' low comprehension of certain features of any redeemable CC leads them to redeem them immediately without re-circulating them. Truly, each shop's improvement of comprehension does not necessarily lead to avoiding redemption. Some need to redeem immediately almost all of them to lay in new stock even after they come to a better comprehension. Others may lose opportunities for using them because there are very few affiliated shops near their settled areas. In these cases, improvement of comprehension has no relation with redemption. Consequently, comprehension level is not the only factor affecting the circulation of the CC. The nature of particular businesses of a shop and the characteristics of a particular area may be exerting a big influence. These factors need to be analyzed in a future research.

But if local shops tend to redeem CC coupons without taking into consideration what they are usable for and how they become effective in vitalizing local economies, it would then be vital to adopt more effective means to let local shops know the necessary information and understand significance of CC coupons so as to get them circulative to attain their goals.

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