

Reasons for choosing Polymer banknote technology

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Histories of central banks are always associated with the history of bank note issuance. In Vietnam, the introduction and circulation of polymer banknote since 12/2003 marks a strong move of the State Bank of Vietnam in banknote issuance and management. This choice of the State Bank of Vietnam mainly derived from the demand for anti-counterfeit and the long lifetime of the currency in circulation, cost-efficiency in terms of money printing, issuing, counting, selection and processing in long term. The period of 2 years is not long enough to confirm many things, but we have firm basis to believe that the SBV's application of polymer technology has attained important objectives, meeting the public's demand for a safer, longer and cleaner in circulation. This presentation presents reasons for selecting polymer technology of the State Bank of Vietnam and some major achievements. The presentation comprises of 3 parts, part 1 briefs on the State Bank of Vietnam, part 2 presents reasons for selecting polymer bank notes, some major achievements and final part draws some of the lessons that SBV has learned in the application of polymer technology.

I. Briefings on the State Bank of Vietnam and the history of bank note issuance:

1. Legal status:

According to the law, the State Bank of Vietnam (SBV) is a Ministerial-level agency of the Government and the Central Bank of the Socialist Republic of Vietnam. Like other central banks, one of important functions of the State Bank of Vietnam is to issue and manage currency, regulate the circulation of currency, meeting sufficiently and timely with the demand for cash in the economy, and ensure appropriate denominations and quantities of the currency in circulation. This is also the key function of the Issue and Vault Department in performing the State management and the central bank role in issuing and vaulting cash. Vietnamese currency is dong, international quote is VND.

2. History of currency issuance:

On 2/9/1945, President Ho Chi Minh declared the existence of the Vietnamese State. In 1/1946, he signed the decree to issue the national currency and this task was under the Ministry of Finance. The issuance of the new currency was very important, it confirmed the national sovereignty on currency of the young state, and at the same time continued the cultural identity of a nation with long history of national construction and defense.

In 1951, the National Bank of Vietnam (the former name of the State Bank of Vietnam) was established. Since then, the State Bank of Vietnam have issued 5 sets of currencies. The first set was issued in 1951, replacing the set issued by the Ministry of Finance with the conversion ratio of 1:10. After the peace in North Vietnam, in 1959, the second set

was issued with the conversion ratio of 1:100. In 1975, the former Sai Gon Government collapsed, the currency of the National Liberation Front was issued, replacing old currency of the former Southern Government with the conversion ratio of 1:500. In 1978, new set of currency was issued to have a common currency in the whole country. In the North, the conversion ratio was 1:1, in the South, 1:0,8. In 1985, with the economic renovation policy and international cooperation policies, the fifth set of currency was issued and the conversion rate for the new currency is 10:1. Basically, the fifth set of currency issued in 1985 is the currency in current circulation, except for some small denominations like the 100 VND have been withdrawn from circulation because of inflation in the past 20 years.

3. System of currency in circulation:

As of now, there are 3 substrates in circulation: polymer, cotton, and metal; with 11 denominations and 18 different kinds of currency. The smallest denomination is 100 VND; biggest denomination is 500.000 VND; multiplier between two next denominations is 2 or 2,5. Polymer substrate has 3 denominations: 50.000 VND, 100.000 VND and 500.000 VND. Cotton substrate has 10 denominations: from 100 VND to 100.000 VND. Metal substrate has 5 denominations, from 200 VND to 5.000 VND. Some cotton bank notes will be withdrawn by the SBV from circulation and be replaced by polymer and metals. It shows that the system of Vietnamese currency is in transitional stage, towards a more appropriate system with higher quality, meeting the demand from an active economy at fast growth rate as well as from the international integration of the country in the new era.

II. Reasons to choose polymer technology and some achievements in the application of polymer:

1. Reasons to choose polymer technology:

As mentioned above, the selection and application of polymer technology in Vietnam is mainly derived from the demand for anti-counterfeit, in consistency with local technology and technical level; and making the currency in circulation clean and beautiful, reducing the costs of issuance, better efficiency in cash counting, selecting, and classification in the banking system.

1.1. Better anti-counterfeit of the Vietnamese currency:

As we all know, money counterfeit is a global issue, which does not exclude any country and becomes a big challenge for the money issuers and law enforcers. The fast development of the copying, image processing, digital and computer-assisted technology have made money counterfeit become relatively easy with lower cost than before. Formerly, counterfeiter have to be professional in photocopying and printing and have to use special printer. Now, they can use office computers and commercial scanners connected to color ink-jet printer or laser printer with relatively high quality.

Vietnam, of course, is not an exception. The current set of currency was issued in late 80s, early 90s of the last decade, it was the early stage of the renovation and transition from the centrally planned economy into a market-based economy. This period had high inflation rate, and within the context of embargo, the SBV had to cut down on costs of issuance by using currency of bigger denominations and rather low security features. It is one short-coming and criminals made use of this to counterfeit the Vietnamese dong, destroying the national currency security and stability. At times, counterfeited money appeared at large scale, becoming a hot issue in the society, destroying the public confidence in the legal tender. According to experts, counterfeited money is produced in foreign countries, and then cross-border transported into the country for consumption, especially in rural and remote areas. Some counterfeited cotton 50.000 VND, 20.000 VND detected recently shows that criminals are update with technology of complicated money counterfeiting technology, difficult to be detected by eyes or normal tools like UV lights.

In order to stop money counterfeiting, the SBV made a plan to issue samples of new currencies to replace the most counterfeited denominations in circulation. Change in design and application of new security features (in which, more security features belong to the public) are effective measures to prevent money counterfeiting by many central banks. In 9/2000, the SBV issued cotton bank note with the denomination of 100.000 VND, using anti-counterfeiting features such as: traditional shadow image, optical thread, security thread, fluorescing ink, engraving. In 5/2001, counterfeited money appeared and right after that, this type of counterfeited money were exactly like the genuine one, cashiers have to count each note by hands when receiving the cotton 100.000 VND. It can be the reason why the plan for the new sample of cotton currency to increase security features, such as kinegram anti-counterfeit foil, window-styled security thread was not approved by competent authorities. This caution is necessary because the euro has the same problem: 6 months after the issuance, the euro was counterfeited at serious level (as of now, we know that the European Central Bank has the plan to issue new series of euro in the coming time). It shows the need for a more comprehensive, stronger measure; and thus, the application of polymer is one of the considered solutions.

In the period 1997-1998, the State Bank of Vietnam organized overseas study tours on polymer technology. In countries where polymer technology is applied, polymer has high anti-counterfeit quality, besides traditional security features similar to cotton currencies (shadow image, see-through registration device, engraving), polymer bank notes have special security features with higher anti-counterfeit quality but recognizable by eyes, such as intaglio and embossing in windows. Statistics also come to the same conclusion, counterfeited polymer bank notes are fewer than counterfeited cotton bank notes (number of counterfeited bank notes/million bank notes in circulation). However, polymer bank notes have certain short-comings such as: lower temperature-proof, higher printing costs than cotton bank notes and there is only one exclusive supplier of the substrate, being Securrency of Australia. However, the monopoly of substrate price has to comply with the principle: price cannot exceed twice of cotton bank notes and lifetime has to at least double cotton bank notes.

Another important issue posing to Vietnam is local technology and technical level as well as acceptance by the public. The first test by the SBV was in 1998 with the piloting printing of the front cover of the 5.000 VND note on polymer substrate, using the same plate of the cotton note and the technical facilities of the National Banknote Printing Plant (NBPP), the pilot printing was very successful. By the end of 2000, the SBV decided to print the commemorative 50 VND to confirm its local polymer technology and test the public's attitude. With the support from Securrency, the SBV successfully printed commemorative bank notes and issued on 6/5/2001 on the occasion of the 50th anniversary of the SBV. The success of the commemorative bank note program confirmed the local capacity for the application of polymer technology with allowed rates of spoiled products and price-control of polymer bank notes. Positive feedbacks from the public on the commemorative bank notes facilitates future polymer bank note issuance, especially when there is appropriate preparation, particularly for public information of the new bank notes.

Researches, experience and testing on the new technology have brought us to a conclusion that: If Vietnam had used new design with more security features on cotton substrate (the price could have doubled old cotton bank notes, even the quality and costs would be the same as payment notes), this would not have stopped and prevented money counterfeiting. Only polymer substrate allows anti-counterfeiting quality and reduces costs of issuance.

2. Make the currency in circulation clean, beautiful and with longer lifetime:

Besides high anti-counterfeit quality, polymer bank notes have more advantages than cotton bank notes - higher durability and cleaner than cotton bank note. In the context of high humidity and typical circulation conditions of Vietnam, cotton bank notes are often dirty, curl and lime, absorbing many soils. Therefore, average lifetime of cotton bank note is just about 1.5-3 years, depending on denominations. On the other hand, the classification and selection of cash is currently done by hand and in the cash-based economy like Vietnam, the pressure to count and process cash of the banking system is very huge. It also implies that in such context, it is very difficult to avoid wastes and cost-inefficiency of slow process of money selecting, classification un-timely delivery of bank notes at standard quality back to circulation, leading to the costs of maintaining cash at vaults. Moreover, because of the slow speed of circulation and selection, part of money in circulation (not yet back to the bank) has low quality, being dirty and torn, creating opportunities for mixing with counterfeited money and lengthening the time for counting of the whole banking system of the country. Tests in Vietnamese laboratories and experience in countries applying the polymer technology show that polymer bank notes are 3-4 times more durable than cotton bank notes. Moreover, polymer bank notes are consistent, sustainable, cleaner and do not create "money dust" like cotton ones; thus, the counting of polymer bank notes by machines is more productive, as well as money processing can be more automated.

So, the selection of polymer technology will help the SBV not only to enhance anti-counterfeit possibility but also enhance the lifetime of the currency in circulation, at the

same time cutting down on costs of money issuance in long term and enhancing the efficiency of the counting, classification and selection process of the banking system.

2. Some achievements in the application of polymer technology:

With the leadership of manager and the expertise of technicians of the SBV, the NBPP, and the support from partners, especially from Securrency, we have step-by-step solved all problems, mastered the technology and successfully issued polymer bank notes. Except for a small quantity of polymer 50.000 VND bank note printed in Australia for technical training and technology transfer, all of polymer bank notes are printed in the NBPP of the SBV. As of now, the printing of polymer bank notes at the NBPP has been in order, ensuring product quality, rate of spoil rate is allowed (under 5%); and the price for polymer bank notes does not exceed 2 times of cotton bank notes (without many security features like polymer bank notes). As of now, we are making domestic polymer plate and we are confident that with the experience and knowledge gained so far, we will completely master this technology.

The circulation of polymer bank notes since December 2003 (with denominations of 50.000 VND and 500.000 VND) and since September 2004 (with denomination of 100.000 VND) has met with the public's demand for better bank notes, especially higher anti-counterfeit quality than cotton bank notes. The 500.000 VND polymer bank notes have meet with the cash demand of the economy when the SBV stopped the issuance of payment notes in April 2002 (payment notes had denominations of 500.000 VND, 1.000.000 VND, and 5.000.000 VND, with payment period of 4 - 6 months). Therefore, since issuance, polymer bank notes have been positively welcomed by the public, credit institutions and the state treasury. For bad information on polymer bank notes, such as ink-worn when dipped into the water or easily rubbed, the SBV timely explained and sought for coordination from mass media (the press, the television...). Therefore, consumers understand the nature of the ink-worn phenomenon and are ensured when they use the new bank notes.

More than 1 year after the issuance, early this year, counterfeited 50.000 VND and 100.000 VND appeared in the market. Criminals copy polymer bank notes on the cotton substrate, and the windows are cut through and pasted with nylon. In the future, counterfeited money will be complicatedly produced because counterfeiter will be update of the new technology. However, the important issue is the selection of substrate - the SBV has selected the new substrate, which is more difficult to be counterfeited than cotton but easier to be checked and recognized by the public. Since issuance, the SBV has introduced 15 security features and informed the public in many ways (radio, television, newspaper; posters, leaflets... were delivered to wards and villages in the whole country). The SBV also publicly declares all of the features and how to recognize counterfeited polymer bank notes (such as checking the DOE element in the small windows, the intaglio number in the large window, the shadow image, etc.)

With regards to durability of the polymer bank notes, it can be confirmed that after 2 years of circulation, as of now, there have been no spoiled and distorted polymer bank

notes in normal conditions. Most of distorted and spoiled polymer bank notes are because of contact with high temperature - consumers were not used to the new substrate. Although laboratory tests proves that polymer bank notes are 3-4 times more durable than cotton bank notes, we think that we need longer time of circulation in actual context to confirm the durability of polymer bank notes.

III. Conclusion:

The period since the first issuance of polymer bank notes since 2001 up to now is not so long, but we have achieved important initial outcomes with polymer technology. With the active preparation and efficient support from the supplier, the SBV has step-by-step received and mastered the technology, reached its own objectives, met the public's demand for a safer, more durable and cleaner currency in circulation. In our experience, besides economic and technical factors as presented, the selection of denominations, roadmaps for issuance of new samples, and the close coordination between the SBV, the Ministry of Public Security and concerned Ministries and agencies in the implementation stage plays an important role in the success of polymer bank notes. In the context of Vietnam, there was the demand for big denominations and quick replacement of counterfeited cotton bank notes. This was met by the Government with the timely issuance of the new bank notes by the State Bank of Vietnam. As of now, polymer bank notes really intrude into the socio-economic life of the country, highly appreciated by consumers and credit institutions. We understand that with 18 types of cash in circulation as presented in the introduction part, we still have many things to do to have a more reasonable system of currency. I think that experience of other central banks and concerned institutions is very useful, especially in the research and testing of bank note substrates and security features for all central banks. In this symposium, I have just presented experience and reasons why Vietnam have chosen the new substrate. We are looking forward to listening to your opinions so that we can do further research on this.

Thank you!