

The Bangko Sentral ng Pilipinas' New Generation Currency Notes: Safeguarding the Integrity of the Philippine Currency

AUTHORS



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I. Motivation

When the Bangko Sentral ng Pilipinas (BSP) announced the issuance of the New Generation Currency (NGC) in 2010, it was met with mixed reactions ranging from excitement, skepticism, resistance, and even criticisms on the designs. Notwithstanding these reactions, a common issue that emerges is the rationale for releasing the NGC banknotes.

The old “family” of design series called New Design Series (NDS) has been in circulation for the last quarter of a century. Over the years, there have been important developments in the banknote and printing industry that need to be incorporated in the Philippine currency series. Thus, the BSP decided to launch a successor NGC program, taking into consideration the principles of currency integrity, social relevance, efficiency, unified theme, and aesthetics.

Currency Integrity. The BSP enhanced the security features of the NDS in 2001 by integrating the iridescent band and windowed security thread in the higher denominations starting with the 100-piso up to 1000-piso. The substrate was improved as well by incorporating abaca fibers instead of linen in a cotton-based substrate. Notwithstanding said enhancements, an improved quality of counterfeit notes had been documented of late. Although the recorded volume of counterfeit notes remained insignificant as a percentage of the currency in circulation, prudence dictates that BSP should always be several steps ahead of counterfeiters. The issuance of the NGC is the BSP’s latest initiative to protect currency integrity from the threat of rapidly improving reprographic technology. Preserving and maintaining currency integrity contribute to enhancing public trust and confidence in the BSP which has the sole power and authority to issue currency in the country.

Social Relevance. The design of the NGC was carefully evaluated to make it relevant, coherent, and consistent with the country’s goals and aspirations. One significant design aspect is the tribute to Filipino heroism. The portraits of Filipino heroes that appear on the notes were made younger-looking to reflect the era when they actually began their distinguished public service.

The original Filipino laceworks and accent designs integrated in the background of the NGC notes embody the ingenuity and creativity of the Filipinos. The world heritage sites and natural iconic wonders that are uniquely identified in the various Philippine islands are featured, for the first time, in the whole series of Philippine peso notes. Aside from the aforementioned symbols of unity, recognition, and idealism, the BSP also incorporated an important spiritual dimension. Hence, the adage “*Pinagpala ang bayan na ang Diyos ay ang Panginoon*” (Blessed is the nation whose God is the Lord) is prominently displayed on the obverse of all denominations.

Efficiency. With the latest innovations in currency processing technology and systems in cash handling, the BSP endeavored to make the Philippine currency notes at par with the global trend in banknote printing. The NGC has

been made adaptable to the latest and anticipated innovations in currency processing machines to maximize output and increase the level of efficiency in currency operation.

Unified Theme. In retrospect, the issuance of NDS was done gradually. It began in 1985 with the 5-and-10-piso denominations, followed by 20-piso in 1986; 50-piso, 100-piso, and 500-piso in 1987; and 1000-piso in 1991. Except for the 200-piso (issued in 2002), it took about six years for the seven NDS denominations to be completed. The NDS concept was valued for its attempt to unify a geographically diverse nation, clearly demonstrated in the vignette of the 1000-piso that depicts the Banaue Rice Terraces, the Manunggul Jar, and the Langgal, representing Luzon, Visayas, and Mindanao, respectively. Inspired by this initiative, the BSP decided to integrate the main NDS concept into the brand new banknote series designed to showcase more of the world heritage sites and natural wonders of the Philippines and the unique culture of its people.

Aesthetics. Aesthetic balance was meticulously observed in capturing the essence of the design elements of the NGC notes in distinctive style without compromising the security features of the currency.

II. The NGC process: diverse ideas, technological advancement, and one vision

The NGC was a result of the meeting of the minds of people with diverse backgrounds and ideas: central bankers, artists, technocrats, historians, communication experts, and currency printers. The formal conceptualization process of the NGC started in 2007. The NGC project was undertaken by the BSP's Numismatic Committee (Num Com) in consultation with the Monetary Board (MB) and, subsequently, with the approval of the BSP Governor and the President of the Philippines. The thematic content, designs, and security features of the NGC were finalized only after almost three years of thorough deliberations and evaluation.

Thematic content. The choices for the thematic content also benefited from the expertise and insights of former Central Bank Governor Jaime C. Laya. The selection of appropriate figures and icons was essential in drawing together a unified idea that brings about the story of a nation through the featured portraits and their heroism, remarkable events that marked the building of a nation, scenic spots, indigenous creations, and natural wonders. This feature projects the unique attributes of our land and people. For this reason, our currency is worth even more than its nominal value.

Heroism. The personalities depicted in the portraits belong to various eras in the history of the country but they perpetuate the values and aspirations that are still applicable to the current generation such as bravery, patriotism, gallantry, selflessness, and dedication to duty:

Heroes noted for their struggle for independence:

President MANUEL L. QUEZON (20-piso bill). He was proclaimed President of the Commonwealth of the Philippines after winning the first national elections in 1935. He worked tirelessly to gain recognition for the Philippines as

an independent nation, foster political stability, build up national defense, and strengthen the economy. He was also well known as the father of the national language, Filipino.

President SERGIO OSMEÑA (50-piso bill). He led the Philippines during the critical stage of the transition as an independent nation. He succeeded President Quezon to the presidency-in-exile in 1944, following the untimely death of President Quezon. He returned to the Philippines in the same year with General Douglas MacArthur and the liberation forces in what was known as the Leyte Landing.

World War II heroes who exemplified martyrdom, selflessness and bravery for the sake of the Filipino people and the country (1000-piso bill):

JOSEFA LLANES ESCODA was a social worker, educator, advocate of women's suffrage, founder of the Girl Scouts of the Philippines, and newspaper editor. She showed extraordinary courage by helping prisoners of war during the Japanese occupation. For this, she and her husband Antonio were killed before the end of the war.

Brigadier General VICENTE P. LIM was the first Filipino West Point graduate; he became Chief of Staff of the Philippine Army. Initially wounded in action along with Escoda's husband, he directed guerilla activities from his hospital bed during World War II. He was eventually captured and killed by the Japanese. For his military service, he received the highest awards including the Legion of Merit and the Purple Heart.

Chief Justice JOSE ABAD SANTOS was considered one of the greatest Filipino heroes of World War II for having served as Acting President of the Philippines at the beginning of the war. He was executed for refusing to cooperate with the Japanese forces during their occupation of the Philippines.

Heroes recognized for leading the reconstruction of the nation after World War II:

President MANUEL A. ROXAS (100-piso bill). He was the first President of the Third Republic, which was inaugurated on 4 July 1946. He initiated the drafting of a charter for the establishment of the Central Bank of the Philippines which he deemed as a step towards sovereignty.

President DIOSDADO P. MACAPAGAL (200-piso bill). He was known for land reform and his socio-economic agenda that started the process of economic liberalization. President Macapagal is remembered for having moved the celebration of Philippine Independence Day from 4 July 1946 to 12 June 1898, when General Aguinaldo declared Independence from Spanish colonial rule.

Modern-day heroes as champions of democracy (500-piso bill):

President CORAZON C. AQUINO. The 11th President of the Philippines and the first woman to hold that office in Philippine history, she is best remembered for inspiring the non-violent 1986 People Power Revolution. She is an icon of democracy here and abroad.

Senator BENIGNO S. AQUINO, JR., President Aquino's husband, was also acknowledged as an icon of democracy long before President Aquino's presi-

gency. His struggle and quest for democracy, freedom from political dynasty and dictatorship led to his imprisonment, exile, and eventual assassination. His death set the stage for the first EDSA Revolution.

World heritage sites, natural iconic wonders and local fabric. The initial rounds of discussions regarding the NGC project in 2007 coincided with the selection of the “New Seven Wonders of Nature.” The heartening news about our own Tubbataha Reefs and the Underground River consistently appearing as one of the top favorites for world wonders stimulated the idea of including selected scenic spots and iconic wonders in the NGC.

The scenic spots and the wonderful symbols of nature were presented in their most iconic angles at the back design of the notes matched with lacework design that originated in the same region as the featured scenic spot. The lacework design is evidence of the local ingenuity and local tradition which have been handed down from generation to generation. The Philippine map was integrated as one of the accents of the note design and at the same time the locator of the featured natural wonders.

Banaue Rice Terraces (20-piso). Carved out of the mountains of the Cordillera around 2,000 years ago by our ancestors using simple tools, and still being appreciated, it was declared as World Heritage Site by the United Nations for it showcases an expertise in engineering. Palm civets which are famous for producing one of the best and expensive coffee varieties in the world also thrive in Cordillera. Together with palm civet, a weave design that originated in Cordillera was also integrated to bring out the uniqueness of the region.

Taal Lake in Batangas (50-piso). It is considered the deepest freshwater lake of the Philippines and the host to active Taal Volcano, known as world’s smallest volcano. Eruptions of Taal Volcano for the past centuries had brought about ecological changes in Taal Lake. The once saline water was gradually transformed into freshwater making it now a home to many endemic species that have evolved and adapted to the desalination of the lake’s waters. The lake has a freshwater-adapted population of the giant trevally, locally known as Maliputo, a delicious milky fish which is visible at the lower portion of Taal Volcano. Similarly, an intricate embroidery design handcrafted in Batangas was made to complete the set of wonders that are proudly Batangueño.

Mayon Volcano (100-piso). The Bicol region’s pride and one of our best natural icons, it is the country’s most active volcano, having erupted over 49 times in the past 400 years according to sources. Renowned for its “near perfect cone,” Mayon’s symmetrically conical shape was formed by pyroclastic and lava flows from previous eruptions. On the reverse side of the 100-piso is the Butanding or whale shark, the world’s largest living fish; it is the main attraction in Donsol, Sorsogon. The lacework design highlight was crafted from indigenous textile in the Bicol Region.

Chocolate Hills (200-piso). Bohol’s most famous attraction, they look like giant mole hills which appear verdant green on rainy days and chocolate brown during the dry season. Numbering about 1,266 hills, they rise to 30 to 50 meters. Most people who first see pictures of the landscape can hardly believe that these hills are not man-made artifacts. It is said that up to this day, not even geologists have reached a consensus on how they were formed. The most commonly accepted theory is that they are the weathered formations of a kind of marine limestone on top of impermeable layer of clay. The Philippine tarsier,

considered Bohol's trademark, is known for being one of the world's smallest primates that can fit comfortably in one's hands. Handcrafted lacework of the Visayas, which further indicates that the Filipino creativity is widespread and is not a monopoly of Luzon, complements the design on the reverse of the note.

Puerto Princesa Subterranean River National Park (500-piso). The eight-kilometer river in Palawan is one of the 28 finalists for the “New Seven Wonders of Nature” competition. A distinguishing feature of the river is that it winds through a cave before flowing directly into the South China Sea. It includes major formations of stalactites and stalagmites as well as several large chambers. The Puerto Princesa Subterranean River is reputed to be the world's longest underground river. The area also represents a habitat for biodiversity conservation. The site contains a full mountain-to-the-sea ecosystem and has some of the most important forests in Asia. It was inscribed by UNESCO as a World Heritage Site on 4 December 1999. Records show that the park is home to 165 of the 252 known bird species in Palawan, including all of the 15 endemic bird species of the province. One of the notable species seen in the park is the **Blue-naped parrot** (*Tanygnathus lucionensis*). The woven cloth from Southern Philippines completes the design on the reverse of the note.

Tubbataha Reefs Natural Park (1000-piso). The Tubbataha Reef, which lies in a unique position in the middle of the Sulu Sea and is one of the Philippines' oldest ecosystems, is the hallmark at the reverse of the note. It plays a key role in the process of reproduction, dispersal, and colonization by marine organisms in the whole Sulu Sea system, and helps support fisheries outside its boundaries. The Park provides an important habitat for internationally threatened and endangered marine species. The property supports the highest population density known in the world for white tip reef sharks. The critically endangered Christmas Island Frigatebird is a regular visitor to the property. The oyster with a pearl inside is found at the center-bottom. Sulu Sea is part of the South Seas, the natural habitat of oysters that produce the largest pearls grown in the world. The colors of these treasures range from white to silver and golden. The so-called **Tinalak** or ikat-dyed abaca woven local fabric in Mindanao, the definitive relic of the Moslem-influenced culture, completes the reverse of the note.

Design. To have a smooth transition from the “old” NDS to the NGC and to facilitate easy recognition of the different denominations, the Monetary Board decided to retain some of the features of the NDS in the NGC banknotes. These features are the size, the predominant color, and the portraits, with the exception of the 500-piso which now includes the portrait of former President Aquino appearing side by side with her husband, former Senator Aquino. There was a major change, however, in the vignette or back design. Pictures and sketches of the world heritage sites and iconic natural wonders are featured in the NGC as opposed to the historical buildings and events in the NDS. These historical buildings and events depicted in the NDS series were instead used as bases in the choice of heroes in the portrait design.

The BSP concept of the NGC's basic designs was executed by two groups of Filipino artists. Studio 5 was responsible for the 20-, 50- and 1000-piso notes and Design Systemat for the 100-, 200-, and 500-piso denominations. These artists bested three (3) other participants in the competition organized by Num Com, in coordination with the BSP's Corporate Affairs Office (CORAO) with the purpose of hiring the services of the best artist groups.

The NGC is the only design series that has been approved by two presidents, former President Gloria Macapagal Arroyo and her successor, President Benigno S. Aquino III.

Figure 1 illustrates the obverse and reverse of the six denominations of the New Generation Currency while Table 1 provides, in matrix form, a short description of the designs for each denomination.

Figure 1



Table 1

Description of Designs of the New Generation Currency Notes							
Historical Era	Denomination	OBVERSE			REVERSE		
		Portrait	Background Design (left)	Background Design (right)	Natural Wonder	Symbols of Nature	Originating Region of Lacework Design
Before Independence	20-piso	Manuel L. Quezon (19 Aug. 1878 to 01 Aug. 1944)	Filipino as the National Language, 1935	Malacañan Palace	Banaue Rice Terraces (UNESCO World Heritage Site)	Palm Civet	Cordilleras
	50-piso	Sergio Osmeña (09 Sept. 1878 to 19 Oct. 1961)	First National Assembly, 1907	Leyte Landing	Taal Lake	Maliputo	Batangas
After Independence	100-piso	Manuel A. Roxas (01 Jan. 1882 to 15 April 1948)	Central Bank of the Philippines, 1949	Inauguration of the Third Republic, 4 July 1946	Mayon Volcano	Whale Shark	Bicol
	200-piso	Diosdado P. Macapagal (28 Sept. 1910 to 21 April 1997)	EDSA People Power II & Independence House	Barasoain Church	Bohol Chocolate Hills	Philippine Tarsier	Bohol
Modern Day	500-piso	Corazon C. Aquino (25 Jan. 1933 to 01 Aug. 2009)	EDSA People Power I, February 1986	Benigno S. Aquino, Jr. Monument	Puerto Princesa Subterranean River National Park	Blue-naped Parrot	Southern Philippines
		Benigno S. Aquino, Jr. (27 Nov. 1932 to 21 Aug. 1983)					
World War II	1000-piso	Josefa Llanes Escoda (20 Sept. 1898 to Jan. 1945)	Centennial of Philippine Independence, 1998	Medal of Honor	(UNESCO World Heritage Site) Tubattaha Reefs Natural Park	South Sea Pearl	Mindanao
		Vicente P. Lim (24 Feb. 1888 to 31 Dec. 1944)					
		Jose Abad Santos (19 Feb. 1886 to 2 May 1942)					

Security Features. Designing a currency goes beyond sketches, drawings, and colors. Currency requires more features that are resistant to counterfeiting. The designs executed by the Filipino artists have to be adjusted by the banknotizer, a highly trained artist on currency design, to incorporate the security features without affecting the original design concept. This process is called banknotization. The banknotized note is akin to a “blue print” that serves as a guide from beginning to end of the banknote printing process. However, this kind of expertise is not yet locally available; thus, the BSP had to tap the services of foreign experts. Seven currency printers, pre-selected by the BSP’s Banknotes and Securities Printing Department (BSPD), were invited in a competition to create a banknotized version for NGC. The competition was won by De La Rue (DLR) Currency of London for all denominations. The services were provided free by DLR.

The winning banknotized version was further evaluated and enhanced, in preparation for the most delicate stage in NGC note production, i.e., the origination process, which was also done by DLR. It was during this process that the details of the NGC print-based security features had to be engraved in a plate. Color formulation and separation were also considered in this stage. The execution of the origination process requires the highest level of caution and accuracy as any mistake on the master plate would be carried over to the final stage of currency production, the banknote printing.

The NGC was printed by Oberthur Technologies, which won the bidding for currency printing for all denominations held among six participants. One of the requirements for NGC printing was for the banknote security paper to carry the BSP-specified paper-based security features. These NGC security features were selected on the basis of their machine readability and adaptability to recent innovations in currency processing and automated tellering machines. The new features of the NGC notes were designed such that ordinary cash handlers can easily recognize the authenticity of each denomination while at the same time making it difficult and expensive for counterfeiters to imitate. For greater protection, the NGC notes were provided with four layers of security features:

Level I: Security features which can be easily recognized by the public without the use of special instruments. These are the “look,” “feel,” and “tilt” elements in the notes, enumerated below. Figure 2 provides an illustration of level 1 security features.

1. Embossed prints: The embossed or raised print nature of the ink deposition combined with the quality of cotton-based paper gives the traditional banknote a unique tactile effect that makes it the first and the most important line of defense against counterfeiting. This can be felt over the words “REPUBLIKA NG PILIPINAS,” denominational value in text, signatures, and value panels particularly, the one located at the lower right corner of the obverse.
2. Asymmetric Serial Number: Alphanumeric characters at the lower left and upper right corners of the note bearing one or two prefix letters and six to seven digits, with font increasing in size and thickness.
3. Security Fibers: Visible red and blue fibers embedded on the paper and randomly scattered on the face and back of the note.
4. Watermark: Shadow image of the portrait with the highlighted denominational value that is particularly seen against the light from either side of the blank space on the note.
5. See-Through Mark: The pre-Hispanic script (Baybayin) at the lower right corner of the face of the note slightly above the value panel. This is seen in complete form only when the note is viewed against the light. This script means “PILIPINO.”
6. Concealed Value: The denominational value superimposed at the smaller version portrait at the upper left portion of the note. This becomes clearly visible when the note is rotated 45 degrees and slightly tilted.
7. Security Thread (Embedded or Windowed): Embedded thread that runs vertically across the width of 20- and 50- piso notes when viewed against the light. Also, the stitch-like metallic thread on the 100-, 200-, 500- and 1000-piso notes which changes color from red to green and bears the cleartext of “BSP” and the denominational value on the obverse and “BSP” on the reverse, both in repeated series.
8. Optically Variable Device (OVD) Patch: Found only in 500- and 1000-piso notes, this patch is a reflective foil, bearing the image of the Blue-naped parrot for 500-piso/clam with South Sea pearl for 1000-piso, changes color from red to green when the note is rotated 90 degrees.
9. Optically Variable Ink (OVI): Found only in the 1000-piso note, this embossed denominational value at the lower right corner of the face of the note changes color from green to blue when viewed at different angles.

Figure 2



Level II: Security features recognizable by professional cash handlers/bank tellers with the use of magnifying lens or ultraviolet light. Examples are fluorescent features and microprinting.

Level III: Hidden or covert security features that are reserved for the use of the BSP.

Level IV: Forensic security features which require special laboratory examination procedures and equipment for identification; most relevant in establishing the authenticity of a banknote in the course of any court proceedings.

III. Other Features of the NGC

The BSP is proud to be the first to adopt the latest OVD patch security feature in the NGC. The technology of the OVD patch used in the NGC is anchored on the characteristic color permutation that is different from the OVD patch seen in euro notes, Japanese yen and other currencies of the world. This makes our currency design at par with or even better than the currencies of other central banks worldwide. The NGC is also the first currency note in Asia to incorporate the hygienic treatment of the substrate to make it a hostile environment for *E. coli* bacteria and *Aspergillus niger* fungus, which can cause diarrhea and skin diseases, respectively.

IV. Summary

The NGC design can be aptly described in four (4) Filipino adjectives: *Matibay*, *Makulay*, *Maganda* and *Malinis*.

Matibay (strong). Our currency contains Philippine abaca, which is known for its strength and versatility. This is a reflection of the resilience of our economy amidst challenges.

Makulay (colorful). The vibrant colors in our banknotes symbolize the colorful history of our nation. They also mirror the happy and fun-loving Filipino disposition even when faced with adversities.

Maganda (beautiful). Our country is beautiful, epitomized by the featured natural wonders. For all their beauty and bounty, our country's natural resources are worth preserving as these are our refuge against hunger, calamity, and boredom.

Malinis (clean). As mentioned earlier, each NGC note was given hygienic treatment that makes it hostile to the growth of *E. coli* bacteria and *Aspergillus niger* fungus.