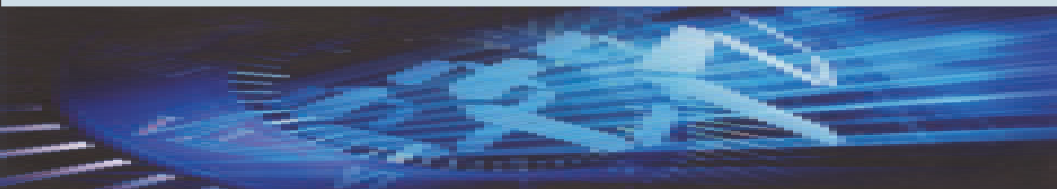


PAYMENT SYSTEMS REPORT

2005



June 2006

SUMMARY OF KEY STATISTICS IN 2005

Total Population

62.38 million

Gross Domestic Product at current price :

THB 7,103.0 billion

Technological Infrastructure:

- Number of fixed - line telephone subscribers per 100 inhabitants: 12
- Number of mobile telephone subscribers per 100 inhabitants: 51
- Number of internet users per 100 inhabitants: 12



Payment statistics

- Number of Thai commercial banks 16 with 4,228 branches
- Number of foreign commercial banks branches 17 branches
- Number of specialized financial institutions (bank only) 6 with 1,420 branches
- Number of post office branches 1,146 branches
- Number of Automated Teller Machines (ATM) 15,784 machines
- Number of EFTPOS machines 102,000 machines
- Number of credit cards 9,958,571 cards
- Number of debit cards 11,043,800 cards
- Number of ATM cards 28,752,512 cards
- Currency in circulation per capita as of 31 December 2005 THB 10,093
- Number of cheque usage per capita 1.4 items per year
- Monthly average value of credit card payments by Thai citizen THB 3,248 per credit card
- Monthly average value of ATM cash withdrawals THB 5,948 per ATM and debit card

Message from PSC Chairman

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It has been over a decade in which we have seen continuing changes in payment systems, initiated by either the private sector, or relevant public agencies. The first major transition started when commercial banks cooperated in pooling the local ATM services into a single uniform network in 1993, thus enabling people to use services from ATM machines of all banks. Such a change was rather difficult to materialize in some countries. Then, in 1995, 1996 and 1997, Bank of Thailand (BOT) launched three major payment systems, i.e., BAHTNET, ECS and SMART systems, respectively, to accommodate the national economic expansion through the more convenient, quick and safe payment systems.

Payment Systems Committee (PSC) was established in 2001 to supervise policy issues concerning payment systems of the country, considered significant matters comparable to monetary policy of the whole nation. PSC also stipulated that local financial institutions dispatch some experts to represent in the committee, which, in turn, signaled a start of concerted effort to engineer the uniform payment systems to enhance effectiveness of national economy in general. One year later, there came the **Payment Roadmap 2004**, as a guideline for the development of payment systems of the Kingdom. This included the establishment of the **Subcommittee on National Payment Cooperation**, with most of its members represented by commercial banks to push forward the creation of payment infrastructure and standards for higher efficiency in the local payment systems, and in the meantime to reduce duplicate investment among payment service providers.

Another major transition in the Thai payment systems was observed in 2005, starting from an announcement by BOT to change its role to **oversight of the local payment systems, gradually shifting the role as the payment service provider to the private sector**. The new BOT role will allow the local payment systems industry to catch up with the changing payment systems and procedures, an emergence of some non-bank institutions, including penetration into Thailand's local market by service providers from overseas. Attention should be paid to the recent changes

in business undertaking styles, especially the shift toward creation of business alliances, such as cooperation between commercial banks and cell phone service providers, etc.

These are the main thrusts that lead to complete changes in payment service business, posing great challenge to BOT with regard to its oversight role to ensure the efficient and safe system amid a new business surrounding. BOT is now preparing for the drafting of a Royal Decree to govern oversight of electronic payment services, which will empower BOT to supervise services by commercial banks and non-bank institutions, including electronic money services. This will lead to greater efficiency in oversight role by BOT.

During these recent years, commercial banks industry has shown their readiness to assume BOT role as payment service providers, being seen as a financial infrastructure of the country. BOT will remain the sole operator of the BAHTNET system, being considered a systemically important payment system for financial stability of the country. BOT has gradually allowed private sectors play greater roles in other systems. **SMART** was the first to be transferred to National ITMX Co., Ltd., under cooperation by commercial banks. It is expected that the company will be in service by the end of 2006. Transferring of other BOT payment systems services will depend on readiness of the private institutions themselves.

The next change is that **PSC approved a guideline for payment fees setting among commercial banks to reflect actual costs of services, and promote greater use of electronic means, with reduction of cheque and cash usage.** The new payment fee structure among commercial banks has been in place since March 2006. The use of fee structure has, in fact, been successful in many countries, moving the whole economy to increasingly rely on electronic payment systems. The shift in fee structure will be in line with the actual costs, to ensure fairness for users of services via electronic means, as in the past, they had to shoulder the burdens for users of cash and cheque. Although end results of the new payment fee

Message from PSC Chairman

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structure may not be able to fulfill all objectives, probably unable to satisfy all parties concerned, it is perceived as an important start to the more appropriate fee structure in the future, which will promote competition among service providers in terms of service fees and quality. PSC ordered that service fees be posted on BOT Website.

Other progress of work in 2005 can be summarized, as below:

- National ITMX Co., Ltd., has appointed its Board of Directors and management, now in the process of selecting its Solution Vendors for system development.
- ASEANPay Project has reached an agreement among central banks of Singapore, Malaysia, Indonesia and Thailand, to ensure development of local ATM services for cross-border linkage. This will serve as basic infrastructure for retail payment systems, to be rolled out to other countries in Southeast Asia.
- Cheque Clearing System development policy has been determined for the year 2005-2009. Despite a policy direction to reduce cheque usage, BOT has to carry on improving efficiency of cheque clearing system. In 2005, member banks were able to reduce the Inter-provincial cheque clearing period from 6 to 5 business days. In 2006-2009, there will be a move to prepare for Image Processing system, and reduce the provincial B/C clearing period to only one day (one-day clearing), including the transfer of cheque clearing system to the private sector.
- In security front, there was a comparison between self-assessment of the BAHTNET system and payment systems within member countries of Executives' Meeting of East Asia-Pacific Central Banks (EMEAP). The assessment results showed that Thailand's BAHTNET system is consistent with CPSIPS, at a comparable level to the systems in Japan and Hong Kong, but still lagging behind that of Korea and Singapore.
- Approval was granted to IT Outsourcing Procedure, emphasizing safety

and confidentiality of customer's information, together with preparation of contingency plans in case of processing of consumer's information in foreign countries. In addition, there should be continuing development of local IT personnel.

In the coming year, PSC designates the formulation of **Payment Roadmap 2010**, to be used as a framework for the national payment systems development in continuation from the Payment Roadmap 2004, for mutual benefits of both public and private sectors concerned.

Eventually, although challenges are lying ahead of our payment systems, concerted efforts of all parties concerned, notably the Subcommittee on National Payment Cooperation, I myself, as Chairman of PSC, am highly convinced that the existing payment systems will be able to weather all challenges and to reach international standards, for which we have all expected.



M.R. Pridiyathorn Devakula
Chairman, Payment Systems Committee

16 May 2006

Payment Systems Committee (PSC)

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Chairman

M.R. Pridiyathorn Devakula
Governor

Duties of Payment Systems Committee

(as stipulated under order 369/2544 on establishment of Payment Systems Committee on 27 August 2001)

1. To formulate national payment policy directions and establish suitable and transparent technological standards.
2. To promote efficient payment systems, and support the use of new payment methods or services in the country, and cross-border linkages.
3. To oversee and determine risk reduction measures in the payment systems, and consider the appropriateness of adopting standards set by international organizations.
4. To coordinate private sector development in a consistent manner to reduce basic infrastructure costs, and to regulate payment services they provide.
5. To publish an annual report to summarize the work of the Committee that is transparent and of good standard

Members

1. Mrs. Swangchit Chaiyawat
Deputy Governor, Corporate Support Services
2. Dr. Chim Tantiyaswasdikul
Assistant Governor,
Information Technology Group
3. Sub.Lt. Yodchai Choosri
Assistant Governor, Operations Group
4. Mr. Krirk Vanikkul
Assistant Governor,
Financial Institutions Policy Group
5. Ms. Nitaya Pibulratanaigut
Assistant Governor,
Financial Markets Operations Group
6. Mr. Samart Buranawatanachok
Assistant Governor, Supervision Group
7. Mrs. Soisukon Niyomvanich
Director,
Deposits and Debt Instruments Department
8. Ms. Sibporn Thavornchan
Senior Director,
Information Technology Department
9. Mr. Semsingh Sinhaseni
Senior Director, Legal Department
10. Dr. Thaweesak Koanantakool
Director, national Electronics and
Computer Technology Center
11. Mr. Manoo Ordeedolchest
Honorary President,
Association of Thai Computer Industry
12. Dr. Somchai Richupan
President, Siam Development Institute
13. Mrs. Saowanee Suwannacheep
Commissioner, Electronic Commerce,
Electronic Transactions Commission

Member and Secretary

14. Mr. Sayan Pariwat
Senior Director, Payment Systems Department

As of December 2005



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Payment Policy in 2005

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Payment Systems Committee (PSC) establishes a policy direction of the country in compliance with advanced technology for payment systems and business development at both local and global scales.

Principal Policy Achievements by PSC in 2005

▶ **Guideline for setting payment service fees of commercial banks**

PSC approved the guideline for payment service fees of commercial banks, aiming to promote greater use of electronic media, and to reduce cheque and cash usage, under two frameworks for payment service fees, i.e.,

(1) Set payment service fees according to market mechanism, under supervision of BOT.

(2) Encourage commercial banks to set service fees that promote greater use of electronic means, and lesser use of cheque and cash.

PSC, furthermore, recommended that a comparison of payment service fees among banks and non-bank institutions be shown on BOT Website. Also shown on Website were recommendations for public use, which, in turn, would promote greater competition in terms of pricing and service excellence among service providers in the market.

▶ **Code of Conduct for Information Technology Outsourcing**

PSC approved a Code of Conduct for Information Technology Outsourcing, urging financial institutions to exercise great care for security and confidentiality of customer's information. In case where the information will be processed overseas, they must make sure that there is sufficient information ready for domestic business undertakings amid interruption in cross-border data transmission. Emphasis should be made on improving knowledge base of local IT.

▶ **Oversight of Electronic Money**

PSC approved the oversight of electronic money, being under Announcement

of Ministry of Finance and Revolutionary Council's Announcement, 58th Edition, to be under a supervisory framework under a draft of the Royal Decree Regulating Electronic Payment Service Business, B.E. (to be enacted in 2006). According to the Electronic Transaction Act B.E. 2544, Section 32 empowers BOT to oversee electronic payment services. PSC also endorsed definitions of electronic transactions. The draft Royal Decree is now under scrutiny of the Electronic Transaction Committee.

► **Interbank Transaction Management and Exchange (ITMX) Project**

PSC promoted the establishment of National ITMX Co., Ltd. to operate ITMX system-a payment infrastructure to serve as a Payment Gateway for interbank settlements and other future e-commerce transactions. Subcommittee on National Payment Cooperation (SNPC) played important role in establishing ITMX.

► **Development of Cheque Clearing System, 2005-2009**

PSC endorsed the development guideline for cheque clearing system during 2005-2009, detailed below:

- **2005** stipulated commercial and specialized banks to reduce Inter-provincial cheque clearing duration from 6 to 5 business days.
- **2006-2007**
 - (1) Improvement of provincial cheque clearing system to accommodate Clearing and B/C systems
 - (2) Preparation for Image Processing
 - (3) Preparation for transfers of ECS and B/C-3D systems to National ITMX Co., Ltd.
- **2008-2009**
 - (1) Transferring of ECS and B/C-3D systems in Bangkok to National ITMX Co., Ltd.
 - (2) Reduction of Inter-provincial cheque clearing duration to "One-Day Clearing"

Message from Chairman of Subcommittee on National Payment Cooperation

1 2

Last year, Subcommittee on National Payment Cooperation received commendable support from commercial banks in sending representatives to implement some payment and funds transfer service projects. Progress of work was worth noting and able to ensure concrete success of the National Payment Policy which can be summarized, below:

Adjustment of Payment Settlement Fees

Payment settlement fees through commercial banks must be transparent and fair to consumers. Meanwhile, the actual costs of each type of services must be reflected. Moreover fairer and transparent service fees must promote the electronic payment and funds transfer services to thrive steadily and continuously as the low-cost, convenient, safe and highly effective channel. SNPC has played a key role in presenting and pushing forward the setting of maximum set prices to be collected from customers, according to the policy aforesaid. Such a price-setting was announced and put for use since early 2006. SNPC is convinced that the above service fee structure will be a stepping stone for continuing progress in the payment systems of the country in the future.

Establishment of National ITMX Co., Ltd.

In 2005, there was a close consultation between SNPC and Thai Bankers' Association (TBA) concerning an establishment of a central company, with shares being held by TBA members in order to provide payment services among member banks and other domestic financial institutions. This is to ensure a standard payment system for the whole country. It must operate with high efficiency, together with convenience, swiftness and safety. An operating cost must be maintained at an appropriate level, reducing duplicated investment among member banks. In addition, it will promote expansion of electronic commerce of country, in accordance with a key policy of Payment Systems Committee. It will greatly facilitate consumers in using payment services of all banks all over the country, 24 hours a day, 7 days a week when the company fully operates in 2007. Thailand will take a lead in providing excellent services for consumers. National ITMX Co., Ltd. was registered since September 2005. It is now in a selection process of solution vendors for Interbank funds transfer and payment services, which will be gradually extended for member banks by Q4/2006.

Start of International Cash Withdrawal Service

SNPC in consultation with ASEANPay Steering Committee, comprises of four member countries, i.e., Singapore, Malaysia, Indonesia and Thailand, agreed to provide cross-border payment systems in order to offer convenient services to consumers and corporations among member countries. The Meeting resolved to start with funds withdrawal services via ATMs in each country in 2006. These will support international funds transfer service and tourism industry through ATMs, being convenient, swift and cheaper than the existing system. The Steering Committee is certain that such services will be popular among consumers in a short term.

Start of Domestic Interbank Funds Transfer Service via Branch Networks

In December 2005, SNPC jointly worked with commercial banks in providing interbank funds transfer services to consumers, allowing them to use interbank funds transfer services via networks of commercial banks participating in the project. They can use services with any branches of participating commercial banks all over the country. These will provide easy, quick and safe services for consumers because such transactions will be confirmed by the fund transferring banks, which will provide immediate effects on the funds receiving accounts through the Online Real Time system. A start of such services will make the funds transfer service of Thailand as one of the highly efficient systems in the world.

SNPC has implemented the project, through designated steps of the Roadmap as set by Payment Systems Committee, BOT¹ the formulator of a key policy for payment systems development. Such implementation has been successful through supports and consultation by PSC, commercial banks, and all public and private agencies concerned. All working groups share common visions to drive Thailand's payment systems to reach a forefront standard on international scale very soon.



Mr. Teera Aphaiwongse

Chairman of Subcommittee on National Payments Co-operation

6 May 2006

Subcommittee on National Payments Co-operation (SNPC)

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Chairman

Mr. Teera Aphaiwongse
Senior Executive Vice President
Bangkok Bank Public Company Ltd.



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Members

1. **Mr. Charamporn Jotikasthira**
Executive Vice President
Siam Commercial Bank Public Company Ltd.
2. **Ms. Supattra Hiranras**
Executive Vice President,
Krung Thai Bank Public Company Ltd.
3. **Mr. Chet Raktakanishta**
First Executive Vice President
Bank of Ayudhya Public Company Ltd.
4. **Ms. Vilawan Vanadurongvan**
Adviser,
Bank of Ayudhya Public Company Ltd.



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Members

5. **Mrs. Chanya Wacharapibul**
Vice President, Operating System,
Thailand Post Company Ltd.
6. **Ms. Vira-anong C. Phutrakul**
Managing Director,
Citibank N.A.
7. **Mr. Sayan Pariwat**
Senior Director, Payment Systems Department,
Bank of Thailand



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Member and Secretary

8. **Mr. Pramoth Chaiamphorn**
First Senior Vice President,
Kasikornbank Public Company Ltd.
As of December 2005



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Duties of Subcommittee on National Payments Co-operation

(as stipulated under Payment Systems Committee order 1/2545 on establishment of the Subcommittee on National Payments Co-operation on 25 December 2002)

1. To consider code of conducts in providing payment services and to set technical standards for payments infrastructure in order for common utilization that is efficient, secure, and promotes fair competition.
2. To consider policy approaches in areas as follows:
 - 2.1 Promote the common use of payment systems for efficiency and for reducing duplicate investments.
 - 2.2 Support and initiate modern payment instruments, payment technology, and payment services.
 - 2.3 Promote linkages in both domestic and international payment systems.
 - 2.4 Implement data collection and payment-related research for the benefit of organizations in both public and private sectors.
3. To consider structure and guidelines in establishing a co-operative organization among payment service providers in order to efficiently undertake the duties and responsibilities from subcommittee as noted in the two points previously mentioned.



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Achievements in 2005

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SNPC was established on December 25, 2002, by Payment Systems Committee, primed with key responsibilities for determination of payment system guidelines and technical standards for infrastructure of the national payment systems. This will promote collaborative payment systems, and reduce duplicate investment in payment systems. Then, it will lead to innovative payment systems, able to promote interconnection among payment systems, both local and foreign. Key achievements by SNPC in 2005 can be summarized, as follows:

Guideline for fee setting for payment instruments of commercial banks

SNPC set a guideline for fee setting for payment instruments of commercial banks, in line with the actual operating costs. This will promote greater use of electronic means and lesser use of cheque and cash. SNPC was assigned by PSC to conduct a study in details and present a new fee structure, under the operating guideline, as below:

- The new fee structure will be based on the results of the study by Thailand Development Research Institute (TDRI), which will reflect operating cost. Fee structure will be in line with actual costs and avoiding double costs.
- The new fee structure must encourage consumers to shift to electronic channels, under low operating costs. They should shift away from paper, such as cheque, or use of counter services, now operating with high costs.
- The new fee structure will reduce fee disparity between consumers in Bangkok and upcountry (as the single uniform service fees will be applied all over the country).
- Consumers will have more alternatives in choosing banks providing appropriate payment services fees.
- The new service fees will be the maximum service fee chargeable for consumers by most commercial banks, each of which will be able to offer the different service fees according to market mechanisms.

From the above guidelines, SNPC announced a new fee structure, as approved by PSC. The new fee structure has been announced to the public on January 31, 2006, thus leading to higher fees for some services, or vice versa. Consumers will have more options for payment services. Fee income for banking industry and most consumers will not be affected from such change. SNPC will review the service fees to be in line with, the changing economic surrounding, the monetary, and payment policy of the country every 2 years.

Establishment of National ITMX Co., Ltd. for ITMX system

ATM Pool Co., Ltd., was renamed to National ITMX Co., Ltd., for handling all ITMX operations, together with appointment of the Board of Directors and management. It is now in a process of selecting Solution Vendors for system development, and preparation of outsourcing contracts in the first half of 2006. Services to be available in the system would include ATM, SMART Credit, SMART Debit, Direct Credit, Direct Debit, Online Retail Funds Transfer (ORFT) via ATM, interbank counter funds transfer service, and services via e-channels such as mobile phones and internet, etc. The system will also be able to provide international funds transfer service in the future.



ORFT service via commercial bank counters

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ORFT service will be extended to cover interbank counter funds transfer services to a receiver holding accounts of any banks all over the nation and fund is available immediately. This service was launched in December 2005. Five banks were able to provide such service at the initial period. Other banks will be able to provide such service very soon. Moreover, funds can be transferred to receivers that do not have accounts at commercial banks. For instance, they may be able to receive the transferred funds at a post office.



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Major Developments of Thailand's Payment Systems

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1.1 Payment Policy

BOT has embarked on its payment policy through consistent work plans that complement strategic objectives. Both work plans and strategies are adjusted each year to ensure consistency and suitability in line with the changing economic, financial, and technological surrounding. Four key strategies in 2006 are directly involved with the payment systems of the country, especially the development of perfectly functioned payment systems, i.e.,

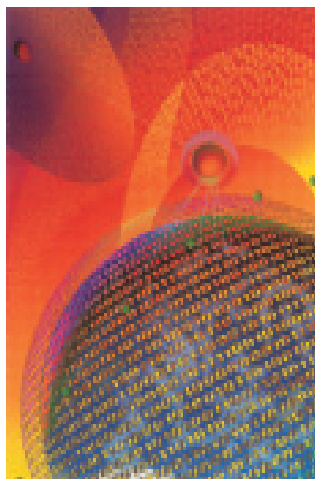
- 1) Adjust BOT role towards oversight of the payment systems
- 2) Promote greater use of electronic means in lieu of cheque and cash
- 3) Monitor innovation of electronic means, and promote use of appropriate electronic means
- 4) Promote cross-border linkage payment system of corporate entities in ASEAN

All these four strategies focus on two main areas, i.e., enhancement of **efficiency and reduction of risk**, in recognition of significance of payment systems to the national economic system, seen as a key mechanism for economic and financial activities.

- **Enhancement of Efficiency**

PSC has set a clear policy to promote widespread use of electronic-based payment, and discourage the use of paper-based payment to an appropriate level.

During 2004-2005, BOT assigned Thailand Development Research Institute (TDRI) to conduct surveys of average costs of various financial services of



commercial banks. The study concluded that certain fees for some payment services currently collected by commercial banks were lower than the actual operating costs. Some commercial banks had borne higher burdens for such services, and sought income from other sources to compensate the unmatched costs, by setting high fees for some means. As a result, PSC had assigned SNPC to study a new fee structure that better reflects the actual operating costs, with reference to TDRI study. The new fee structure should add cash handling costs, being borne by commercial banks. It has been implemented since March 6, 2006, onward.

There is also a strategic plan to promote greater use of electronic payments means in lieu of cash and cheque, compatible with the changing surrounding. This will help reduce cash handling costs among financial institutions and corporate, and provide more options for variable and convenient payment services at appropriate prices. Implementation of such a plan will start in 2006, with emphasis on changes in payment behaviors in some selected economic activities.

- **Risk Reduction**

BOT has developed a “Liquidity Watch” system for monitoring and analyzing funds transfer behaviors and liquidity requirement in the system, showing the analytical results via MS Excel program, which will be ready for use in April 2006 onward. In addition, BOT has upgraded efficiency of the Central Settlement System (CSS) for the more thorough service coverage for greater benefits of operations and cash management among member banks which reduce settlement risk and in line with BIS Core Principles.

1 Major Developments of Thailand's Payment Systems

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- Oversight

Now, the private sector has played a greater role in payment services, in accordance with business expansion and rapid technology advancement. BOT strategies are, therefore, being focused on redefining BOT to oversight role of payment systems of the country. BOT has set a study plan and designate a guideline for redefining of its roles, together with preparation for oversight of the country's payment systems. In the meantime, there are new modes for electronic payment services, and the overall economic values have markedly increased. There are both financial institutions under BOT supervision, and non-bank institutions not, by laws, under BOT supervision. BOT had, therefore, cooperated with **the Electronic Transaction Committee**, in drafting a Royal Decree under Section 32 of Electronic Transaction Act B.E. 2544, empowering BOT to oversee electronic transactions, in order to maintain commercial and financial stability. This will lead to greater credibility and acceptance of an electronic information system, and ensure sound protection of public interests.

1.2 Infrastructure

1.2.1 Interbank Transaction Management and Exchange (ITMX)

In 2005, ITMX Working Group, under the SNPC, undertook the following actions:

- (1) Register National ITMX Co., Ltd., in July 2005
- (2) Short-list 2 out of 6 Solution Vendors for ITMX system development, based the 14-item checklist for selection and visits the actual operation sites of both companies.

(3) Assess project risk and risk control management

It is expected that National ITMX Co., Ltd. will be able to select its Solution Vendors and sign contract by first half of year 2006.



1.2.2 ASEANPay Project

ASEANPay Project aims to develop a payment infrastructure for retail customers across the Southeast Asia Sub-region, emphasizing the development of a more efficient system for cross-border funds transfer service. There are four countries participating in the pilot project, i.e., Thailand, Singapore, Malaysia and Indonesia. The project will be implemented during 2004-2006. There were some joint meetings among member countries in 2005, as detailed below:

- (1) Bilateral meetings between BOT and Bank Indonesia (July 29-31, 2005, in Chiang Mai), Bank Negara Malaysia (August 5-7, 2005, in Malaysia), and Monetary Authority of Singapore (August 19-20, 2005, in Singapore), under the topic of Update on ASEANPay Project. These were aimed at reporting progress of previous actions, and the next steps to be taken, for acknowledgement by Governors of Central Banks of member countries. Another issue being brought up for consideration included the linkage of an ATM network among Southeast Asian nations, to be provided by private sectors.
- (2) Steering Committee Meeting was held in October 2005 in Singapore. The Meeting unanimously considered the cross-border ATM system having appropriate formats, procedures, techniques and business viability. This

1 Major Developments of Thailand's Payment Systems

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is because of the fact that an ATM system is a basic infrastructure being used for retail funds transfers, and it fulfills the ASEANPay objective in developing cross-border payment arrangement. The Meeting, therefore, resolved to support the private sector to develop an cross-border ATM system.

1.2.3 BAHTNET

BOT has continuously improved BAHTNET system to accommodate customer's requirements with a highly convenient and effective system. Actions taken in 2005 included a new function of BAHTNET system to enable users to inquire information on List of Operation Log in BAHTNET system and Security Reports in the AAS system (Authentication & Authorization Services). Another function is data inquiry for funds transfer via BAHTNET system through BAHTNET WEB Services, in addition to a regular statement report on a bimonthly basis.

There is also the production of training media, as "e-learning Courseware" for "BAHTNET Application" for self-learning by users. This helps save time and expenses for training. It will be distributed to all BAHTNET users in May 2006. The Central Settlement System (CSS) Services facilitate Multilateral Funds Transfer (MFT) through BAHTNET system. Complete settlement services have been provided for both public and private sectors concerned since June 28, 2004 for mutual benefits in cash management among users. In 2005, BOT improved CSS system, as below:

- (1) BOT conducted Value Realization by both CSS Settlement Agent and CSS Administrator, inquiring benefits derived from the application system, uses of functions and reports, including useful recommendations to be provided by users. BOT gathered those survey results for improvement of the application system since September 2005.



- (2) BOT has studied and surveyed users demand on additional CSS services for instructing parties and settlers, focusing on efficiency of work and provision of useful data for operations among members, such as transmission of data for settlement among members in addition to submission of proof for account clearing. This included improvement in balance confirmation procedure for Bill for Collection process, from confirmation by fax and telephone, to confirmation through an online system. BOT expects to finish this improvement in 2006.

1.2.4 Improving Efficiency of Cheque Clearing System, Phase 2, 2005



BOT implemented the Project for Improving Efficiency of Cheque Clearing System, Phase 2 in 2005, as below:

- (1) A questionnaire was distributed to Member Banks concerning Cheque Truncation, and a guideline for cheque clearing system development in the future. The survey results were brought up for discussion with relevant working group, and SNPC. They came up with a conclusion to slow down the development of Cheque Truncation system, due to the non-worthwhile returns, but to improve efficiency in Provincial Cheque clearing only precedent to the Cheque Truncation system.
- (2) BOT consulted with the working group and SNPC about the future development for cheque clearing and settlement system, in compliance with a new role by BOT as a regulator. The guideline was approved by PSC since October 2005. In essence:
 - Reduce the B/C clearing period in provinces from 6 to 5 business days from the acceptance of cheque for clearing to be in force under BOT Regulation on B/C Clearing Procedure (2nd Edition) B.E. 2548. It superceded BOT Regulation on Notification of Interbank B/C Clearing Results in Bangkok B.E. 2542. The new regulation has been enforced since January 16, 2006.

1 Major Developments of Thailand's Payment Systems

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- BOT, Member Banks and SNPC together developed a B/C Clearing system to facilitate the B/C clearing procedure which is due for accomplishment within 2006. The system will be installed in pilot provinces before rollout all over the country in 2007.
- Prepare Image Processing during 2006-2007
- Prepare transferring ECS and B/C-3D in Bangkok to ITMX, to be developed as the Cheque Truncation system within 2008 and all over the country in 2010.

1.2.5 Improving Efficiency of SMART System and Transferring to ITMX

BOT has set up 4 major objectives of said project, as below:

- (1) Prepare readiness of Member Banks for migration of SMART system to ITMX system
- (2) Improve SMART system to facilitate GFMIS (Government Fiscal Management Information Systems)
- (3) Entitle BOT as Sending Bank of SMART, after SMART was migrated to ITMX system
- (4) Oversee the protocol to be used jointly by Member Banks of SMART, after SMART was migrated to ITMX system, as detailed below:
 - In 2005, BOT consulted with ITMX working group and a working group for improving efficiency of SMART, including Member Banks about the guideline for improving the system and system transfer. This included the impact assessment from payment fee structure adjustment, in regard to SMART, as well as coordination with Member Banks and other agencies concerned for improving the new fee structure to ensure smooth and efficient operations.



- As for improvement of SMART to facilitate GFMS project, BOT cooperated with the Department of Comptroller's General in planning and testing the system in case of numerous transaction volumes, volume test. The testing results showed that there was no problem for data inputs to GFMS system.

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1.2.6 Central Securities Depository Center

Ministry of Finance formulated the Second Bond Development Plan (2005-2014), aiming to promote a greater role of Thailand's bond market for capital mobilization, aside from financial institutions and equity market. MOF then requested cooperation by all concerned parties, especially BOT, Securities and Exchange Commission (SEC), Thai Bond Market Associations and market participants in seeking the more concrete operation plans within one year. One of these plans in centralization of securities depository services at Thailand Securities Depository Co.,Ltd. (TSD), transferring government securities depository services from BOT to TSD. This prompted TSD and BOT to develop an application system to facilitate transactions, including the development of linkage between application systems of BOT and TSD to facilitate Real-time Gross Settlement-Delivery versus Payment (RTGS-DVP), and related functions of BOT. These include RP market, Intraday Liquidity Facilities (ILF) and registrar services. Since 2005, BOT and TSD has cooperated in implementing action plans, as below:

- (1) Study and analyze impacts from centralization of securities depository services and the setting of business requirement
- (2) Develop basic infrastructure by designating a linkage format, development and improvement of the internal application system, as well as development of link between BOT and TSD, including the User

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Acceptance Test (UAT).

- (3) Coordinate and educate members on the plan to transfer of accounts to TSD and impacts thereof to involved parties of BAHTNET system and members of Book Entry system.
- (4) Conduct Industry Wide Test (IWT) in cooperation with members, and assess the testing results by members
- (5) Conduct a contingency plan for system failure
- (6) Prepare an operation manual, regulation and procedure for relevant parties and members

Furthermore, BOT cooperated with SEC in assessing preparedness of TSD in serving as Central Securities Depository of the country. They also mapped out an oversight guideline for TSD, after merging with CSD, which will start from May 2006 onward.



1.3 Payment Systems Oversight

1.3.1 Measures to ensure payment systems in compliance with BIS Core Principles for SIPS

In 2005, BOT improved BAHTNET system to ensure compliance with BIS Core Principles for Systemically Important Payment Systems (CPSIPS), according to the compliance assessment results by preparation working group under the Reports on the Observance of Standards and Codes (ROSCs) program for the Payment Systems. Progress of actions in 2004 can be summarized, as below:

- (1) Study necessity of issuing a new law for enforcement of Zero Hour Rule¹ in Thailand's payment systems. It is interesting to note that the principle under the Bankruptcy Act B.E. 2483, still being effective at present, does not apply the above provision. There is no need for legal amendment for that issue.
- (2) Formulate a BAHTNET Regulation, by adding issues concerning system risk management, qualifications of BAHTNET users, daily operational procedures, third party funds transfer procedure, claims for compensation caused by funds transfer errors, and penalties for users not in compliance with the regulation. This includes a requirement for BAHTNET users to prepare a contingency plan, and reports on drills of the contingency plan to BOT for acknowledgement, etc. New BAHTNET regulations has been enforced since May 15, 2006 onward.

¹ Zero Hour Rule refers to a provision under bankruptcy law in some countries stipulating that when the court declares any institution bankruptcy, which shall have retroactive effects from the beginning of the day (0.00 Hrs) of the court ruling day. This will make all transactions conducted during said period become null and void. If any country enforces such a provision in payment systems, there will be retroactive effects on complete transactions from the beginning of the day of the court ruling date, thereby making all prior transactions on the same day null and void.

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(3) Prepare e-learning for BAHTNET users to update themselves on additional application systems.

The comparison of self-assessment results of the BAHTNET system with the assessment results of the Systemically Important Payment Systems of countries member of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) showed that Thailand's BAHTNET system complies with CPSIPS at the same level as Hong Kong and Japan, but second to Korea and Singapore.



Box 1**Participation in ROSCs/FSAP (Payment Systems)**

Reports on the Observance of Standards and Codes (ROSCs) Program has been developed jointly by International Monetary Fund (IMF) and World Bank (WB) in order to assess preparation in 12 key areas² by each country. The assessment will be conducted under international standard. Payment Systems, for instance, will be assessed through BIS standard, according to BIS Core Principles for Systemically Important Payment Systems.

Financial Sector Assessment Program (FSAP) is also developed jointly by IMF and WB, especially designed for assessment of financial sector. It covers an analysis of both strengths and weaknesses of the financial sector in general, including linkage with macroeconomic issues of the country. These include the standard assessment under ROSCs Program, which will bear some impacts on the financial sector in six areas, i.e., 1) Monetary and Financial Policy Transparency, 2) Banking Supervision, 3) Insurance Supervision, 4) Securities Market Regulation, 5) Payment Systems, and 6) Anti-Money Laundering. Participating in FSAP Program will, therefore, imply participation in ROSCs Program, as well.

As for Thailand, National Governance Committee Meeting on November 5, 2003, presided over by the Prime Minister, approved Thailand to participate in ROSCs Program. The Meeting assigned relevant subcommittees³ under the National Governance Committee to make some necessary preparations in 12 areas, for Thailand's participation in ROSCs Program. The meeting also assigned to set up working groups to handle preparation according to scope of responsibility. Payment systems will be under responsibility of a Subcommittee on Corporate Governance Upgrading for Commercial Banks, Finance Companies and Insurance Companies, chaired by BOT Governor.

The Subcommittee on Corporate Governance Upgrading for Commercial Banks, Finance Companies, and Insurance Companies is seeking Prime Minister's approval for participation in FSAP Program, as scheduled in 2006. It is expected that the program officers be officers be dispatched for standard assessment in December 2006.

² 12 key areas are, i.e., 1) Data Dissemination, 2) Fiscal Transparency, 3) Monetary and Financial Policy Transparency, 4) Banking Supervision, 5) Insurance Supervision, 6) Securities Market Supervision, 7) Payment Systems, 8) Anti-Money Laundering, 9) Corporate Governance, 10) Accounting, 11) Auditing and 12) Insolvency.

³ There are 6 subcommittees under National Governance Committee, i.e., 1) Subcommittee on legal Amendment and Enforcement, 2) Accounting Standard Subcommittee, 3) Subcommittee for considering Code of Business Conduct among Listed Companies, 4) Subcommittee on Corporate Governance Upgrading for Commercial Banks, Finance Companies and Insurance Companies, 5) Subcommittee on Corporate Governance Upgrading for Securities Companies, and 6) Subcommittee on Corporate Governance Information and Public Relations in Thailand.

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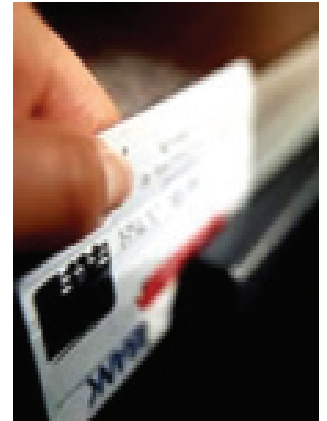
1.3.2 Drafting of Royal Decree Governing Oversight of Electronic Payment Services B.E....

Electronic Transaction Committee passed a resolution to a proposal submitted on July 19, 2004 by Subcommittee on Oversight of Electronic Payment Services and State Electronic Transactions. A Royal Decree should be issued under Article 32 of Electronic Transaction Act B.E. 2544, for oversight electronic payment services, and BOT shall be responsible for oversight under the Royal Decree.

Subcommittee on Oversight of Electronic Payment Services and State Electronic Transactions and Legal Infrastructure Subcommittee together drafted the Royal Decree having been approved in principle by Electronic Transaction Committee, on September 30, 2005. A structural framework of the Royal Decree can be divided in 7 Chapters, 32 Sections, i.e.,

General Provision

- Chapter 1 Electronic Payment Services
- Chapter 2 Criteria and Procedure for Submission of Declaration Form and Registration
- Chapter 3 Licensing Criteria and Procedure
- Chapter 4 Business Undertaking Criteria
- Chapter 5 Oversight
- Chapter 6 Renewal, Suspension and Revocation of License
- Chapter 7 Merging and Acquisition, Service Suspension or Liquidation



Transitory Provision

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List attached to the Royal Decree

Overseeing procedures of electronic payment services can be divided in three levels notice, registration and licensing application, based on factors or degree of impacts on business undertaking in three areas, i.e.,

- (a) Impacts on financial stability and/or commercial activities
- (b) Impact on credibility and acceptance of electronic data
- (c) Impacts on general public

Before drafting the Royal Decree, government agencies had organized some brainstorming sessions to seek comments and recommendations by corporates, general public and related authorities for improvement of the draft Royal Decree on November 18, 2005, February 23 and April 28, 2006.

Next, BOT would lay down a framework and prepare for its oversight of electronic payment systems under the virtue of the Royal Decree, such as the enforcement of criteria and notifications. This includes public relations for all corporates subject to be under jurisdiction of the Royal Decree including all involved parties to acknowledge, understand, and act in compliance with it. In addition, there should be a small-group meeting for ensuring common understanding among entrepreneurs, etc.

1.4 New Payment Services

1.4.1 Electronic money / Electronic cash

Now, there are six companies and one bank permitted to provide E-money services, i.e., Thai Smart Card Co., Ltd., Payment Solution Co., Ltd., TRUE Money Co., Ltd., PaySbuy Co., Ltd., Advanced mpay Co., Ltd., Advanced Magic Card Co., Ltd., and Siam Commercial Bank (SCB) Pcl.

E-money/E-cash is an innovative payment mode that facilitates daily spending without the need of cash. E-money is perceived as a digital purse for purchase and bill payment at merchant stores or via internet. It can be in forms of a plastic card, or the so-called Smart Card, or on computer as Digital Cash or Cyber Cash. Users will have to top-up card or computer media through service providers or agents to record the available amount before using e-money/e-cash at designated shops, such as food shops, online stores, and grocery stores. Sooner or later, E-money can be applied for payment of bus fares or expressway tolls.

There were a number of products gradually launched into the market by those companies last year, especially "Smart Purse" by Thai Smart Card Co., Ltd., which can be used for purchase and bill payment at 7-11 Convenience Stores, and those merchant stores participating in the campaign. "OK Cash" card is a product launched by Payment Solution Co., Ltd. Again, it can be used for purchase and bill payment at merchant stores and food shops participating as members and for funds transfer across smart card issued by the company. This included electronic money on computer of

PaySbuy Co., Ltd. It was another type of digital cash for storing the amount of cash on computer for funds transfer, and bill payment via internet such as payment for auctions, utility expenses and downloads of ring-tones for cell phones, etc. For digital cash, customers can transfer funds from digital cash in computer to bank accounts. Besides, there is also storage of money in account of cell phone subscribers, such as "m-Pay services" by Advanced Info Service (AIS) Plc. "Money Service" by TRUE Money Co., Ltd., which can be used for payment of utilities, as well as bill payment at participating merchant stores, general stores, and some internet shops.

1.4.2 Mobile Payment



In the near future, there will be payment services via cellular phone systems, using "contactless" technology, e.g., RFID-with mobile by itself. A microchip will be installed in cell phone for payment in a "Pay at Point" mode, which will debit money from a credit card or deposit account of the user for payment or funds transfer to the receiving account.

Advanced Info Service (AIS) Plc. has provided "m-Pay" services to its cell phone subscribers since the end of 2004. There are four commercial banks participating in the move, i.e., Siam Commercial Bank (SCB) Pcl., KASIKORNBANK Pcl., Bangkok Bank Pcl., and United Overseas Thai Bank (UOBR) Pcl. Now, there are variety allies in entertainment business, health and beauty, car care, and educational services, etc.

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1.4.3 Funds Transfer to Receiver without Commercial Bank Accounts

Last year, a number of commercial banks offered funds transfer service to a group of customers not holding any deposit accounts at the bank. In particular, "KTB Speed Cash Transfer, by Krung Thai Bank (KTB) Pcl., allows user to fill in an urgent funds transfer form, and submit an identification document to the Bank. When the Bank records all data, the receiving party can take out the money at designated KTB branch, with password and identification documents. A limit for each funds transfer is not exceeding Baht 30,000. Some private companies, such as Counter Service Co., Ltd., under Chuam Rak card provide funds transfer via service points at 7-11, with "Chuam Rak" sign. A limit for each funds transfer is Baht 10,000 a day. The receiver can get funds transferred start from 12.00 a.m. next day, at the registered branch.



2.1 The United Kingdom

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The UK Association for Payments Settlement Services (APACS) has fully launched the “chip-and-PIN” system since February 15, 2006. The card-issuing institution and card-accepting merchants would have to switch to Smart Card, in which customers would have to key their individual PIN code for purchase, in lieu of signing their names on sales slips. APACS has regulated that if any merchants still allow the customers, holding the newly issued cards, to conventionally sign their names on sales slips for payment, the merchants would be held liable to any fraud. Most merchants have therefore switched to “POS Terminal” machine to accommodate a new mode of payment as specified by APACS.

According to a recent report by APACS, the introduction of “chip-and-PIN” technology has led to the first significant reduction of fraud over debit and credit cards for 10 years. Fraud over plastic cards dropped 13 percent, approximately £60 million, to merely £439.4 million in 2005, from a rise as high as 20 percent in 2002. APACS has anticipated that plastic card fraud would have increased to £800 million in 2005, unless the “chip-and-PIN” technology has been introduced. Chip technology prevents forgery of plastic card through copying method, thus leading to the drop in forgery, stealing and loss of plastic cards in the previous year. APACS projected that plastic card fraud would drop significantly in 2006, following the full enforcement of “chip-and-PIN” technology. For a rise in plastic card fraud, it would be mainly involved with “card-not-present” transactions, mainly card payment through internet, telephone or facsimile, rising as high as 21 percent to 183.2 million in the previous year.

To prevent plastic card fraud via internet, APACS is seeking a tool to read chip on cards, and create random password for purchase for each online transaction. **This would make sure that the “chip-and-PIN” system would effectively prevent plastic card fraud via internet.** The use of random password would be more secure than the use of PIN code as the random

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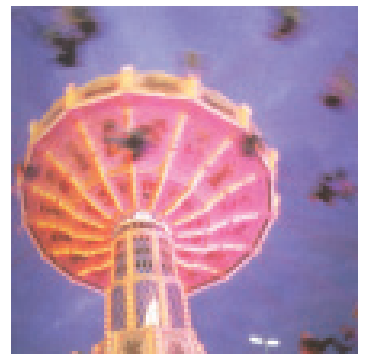
password would be completely useless if it were to obtain illegally by criminals. APACS is now seeking a clear procedure for functioning of the new system.

2.2 European Central Bank (ECB)

As a regulatory body, the European Central Bank (ECB) has stimulated and urged the enforcement of cross-border card payment standards, calling for cooperation of all banks to switch from plastic cards, including "POS Terminal" and ATMs to "EMV chip" standard in **the Single Euro Payment Area (SEPA)**, scheduled in 2010. Without the uniform standard, interoperable problems would prevail. SEPA has allowed merchants to run business with any acquirer within the common payment area.

ECB has anticipated the reorganization of national and international card projects in Europe to result in more efficiencies and full interoperability in processing card transactions. This would reduce transaction cost via plastic cards, which would eventually lead to lower fees for merchants and consumers.

SEPA would create "eurozone", which would incorporate all payments within a single territory, and the present differentiation between national and cross-border payments will be no longer exist. ECB, however, has recently accepted that the schedule for SEPA implementation would be postponed, from the prior schedule. A year ago ECB expected that a fully integrated retail payment clearing and settlement infrastructure could be completed by 2010.





2.3 United States of America

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At present, approximately 5-7 percent of financial institutions in the USA have adopted biometric technology for authentication in making payments. This is being of great interest of many parties concerned because the introduction of biometric technology has led to higher customer satisfaction.

The recent report by International Biometric Group (New York) indicated that biometric business has generated huge revenue of USD 1.2 billion globally in 2004, which would double in 2008, especially for financial service industry. It is expected that such technology would be increasingly adopted at "Point of Sales" and some health care business in the USA.

Biometric equipment cost is a key factor for widespread application of technology in question. The cost is reducing very quickly, as a result of the fast technology advancement. Recently, a renowned technology provider in financial service business in the USA has acquired shares in a leading biometric company, urging leading commercial banks in the USA to pay greater attention to biometric technology.

"Pay By Touch" is an example for application of biometric technology at "Point of Sales", as customers would make payment through their fingerprints at payment machines. The machines would scan their fingerprints for verification, and debit money from customer accounts, instead of plastic card payments. This would ensure quicker and safer transactions. There would be no need to carry cash, cheque and card. Now, there are over 2.3 million customers using "Pay By Touch" technology for payment at more than 2,000 grocery stores and supermarkets in the USA.

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2.4 Japan

Many commercial banks in Japan have adopted “biometric” technology for authentication in order to reduce plastic card fraud.

Joyo Bank of Japan is about to launch a debit card using microchip that contains data on fingerprints of customers. The bank will launch a new version of ATMs, equipped with scanning technology of customers’ fingerprints, compared with the data on microchip. A large electronic giant in Japan Hitachi will provide scanner machine for installation at ATMs, and assist the bank in issuing Smart Card. Joyo Bank expects that the new technology will be ready for use on March 22, 2006, which would help reduce debit and credit card fraud.

Tokyo-Mitsubishi Bank has recently issued “Super IC Card, using “biometric” technology to proof customer’s fingerprints for verification of cash withdrawal by customers. Other banks, i.e., Japan Postal Savings Bank, Mizuho Bank, and Sumitomo Mitsui Banking Corp, are planning to launch ATM cards, using microchip and biometric technology for identification of customers in 2006.



2.5 South Korea

Three mobile phone companies in Korea, i.e., SK Telecom Co., KTF Co., and LG Telecom Ltd., have cooperated with Samsung Card Co., in launching a new “touch-based” technology for mobile phone payments, using Radio Frequency Identification (RFID) technology, since the end of December 2005. Samsung would install microchip in mobile phone equipment of subscribers, which would markedly facilitate mobile banking system for customers. They should merely be in a frequency band for running transactions similar to transportation cards.



To use the said services, customers should have microchip installed in their mobile phone handsets. They are required to sign an agreement with service providers of mobile phone banking services. Point of Sales, with RFID technology, would be installed at department stores, fast foods, cinemas and convenience stores.

Those three cell phone operators of Korea possess the total of 6.5 million subscribers in November 2005. Total subscribers is expected to rise to 10 million or higher by early 2006.



2.6 Malaysia

Three financial institutions in Malaysia have cooperated with MasterCard International in launching a plastic card with “contactless” technology under the name of “PayPass” to replace cash transactions and reduce purchase time for low value purchases.

MasterCard PayPass is a “contactless” card, using microchip under EMV (Europay-MasterCard-Visa) standard, which interoperable globally. It will apply RFID technology for data transmission to settle payment transactions. The cardholders only use card to touch or pass through specially-equipped terminal at the card-accepting store, without sales slips signing.

MasterCard PayPass is a proper substitute for the conventional cash transactions for goods and services that require fast payment, such as fast food, convenience store, cinemas, petrol stations, mass transit system, car parking and expressways.

At the initial stage of PayPass issuance, there are more than 30 merchant stores in Malaysia, accepting the new card service, such as Starbucks coffee shop, Carrefour Group, MPH Book Stores, Express Rail Link and Airport Limo, etc. There are ample opportunity for expansion of PayPass card, given the total number of population at working ages of over 11.5 million in Malaysia.

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2.7 South Africa

Use of mobile phone services in South Africa has increased rapidly, thereby leading to proliferation of low-cost banking service.

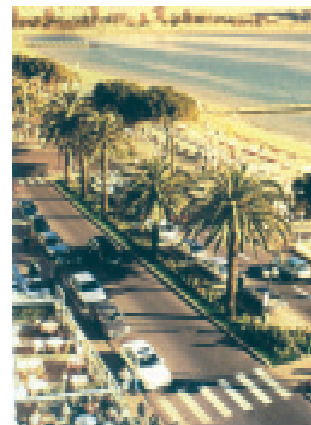
Mobile phone technology has enabled some low-income earners to obtain access to banking services, cash withdrawal or credit card. Digital technology has helped induce rapid development in remote rural areas. Through cell phone technology, those living in the periphery will be able to receive funds transfer from their son working further away in town.

By early August, 2005, a leading cell phone company in South Africa, i.e., MTN Group, and a large commercial bank (Standard Chartered Bank) have cooperated in launching banking services via mobile phone, providing an unprecedented access to the national economic system for millions of low-income people. It is expected that fast growing prepaid phone service will provide a new mode of banking services to some low-income earners, who have never received any services by banks.

In Africa, millions of people can not access to banking services, due to the high service fees in relation to their income. Service fees are relatively high in South Africa, almost the highest in the World. None of banks, however, have extended their services in the remote rural areas.

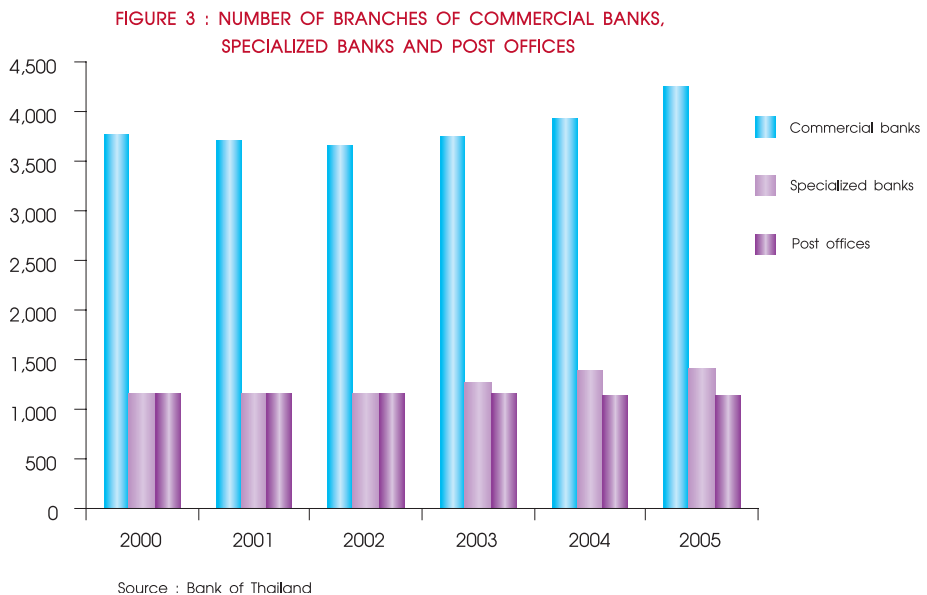
The MTN Banking Project is now aimed at creating easy access to banking services, operated under a low cost, to replace the conventional banking services. There is no monthly fee, except transaction fee. Should mobile banking service in South Africa proceeds considerably well, it is expected that new technology will transform banking services across Africa, in which people still use cash for payment.

A recent report by International Telecommunication Union showed that approximately 80 million people in Africa use cell phone, almost double over the basic land-line phones.



3.1 Development in Payment Infrastructure

3.1.1 Branches of Commercial Banks, Specialized Banks, and Post Office



In 2005, commercial and specialized banks expanded more branches of about 8 and 2 percent, respectively, whereas the number of post offices did not change from the year before.

- **Commercial banks** registered the total 4,245 branches in 2005, increased from 3,943 in the year before. There were 4,228 branches of Thai commercial banks and 17 branches of overseas banks.
- **Specialized banks** had total 1,420 branches in 2005, increased from 1,388 branches in 2004. The Bank for Agriculture and Agricultural Cooperatives (BAAC) had the highest number of branches at 596, followed by 588 branches of Government Savings Bank (GSB), and 118 branches of Government Housing Bank (GHB). The Islam Bank of Thailand saw the

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highest increase in branch expansion, increased by three fold from 9 branches in 2004 to 27 branches in 2005.

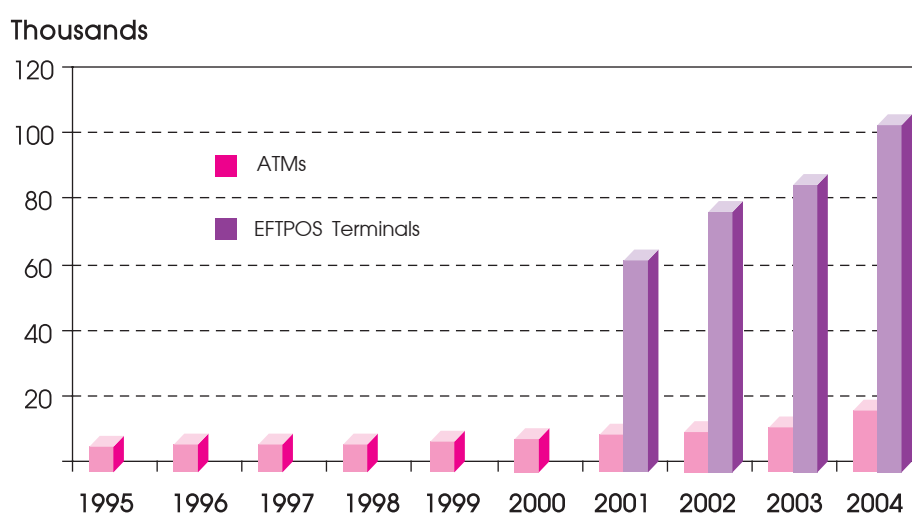
The marked increase in branches of Thai commercial banks can be attributed to the new commercial banks establishment. Most banks still use strategy of increasing sub-branches in order to reach more customers and to compete with some non-bank institutions. They focus on branches located in certain places allowing customers to finish their diverse daily activities in the same complex. These locations include department store, office building, shopping center, hotel, and some famous tourist attractions, with service hours extended compatible with locations.

Most commercial and specialized banks have joined in the modernization of branches in order to provide easier and quicker services. They also deploy automated electronic machines for greater convenience for customers. Both ATM and book update machines increased significantly last year.

- *Thailand Post Co., Ltd.* Recorded total 1,146 branches in 2005, unchanged from the year before. Last year, Thailand Post focused mainly on modernization of their branches, and increased service efficiency, with variable and quick services, through an online system among branches and hi-speed internet, to enhance efficiency in funds transfer and payment services, or "Pay at Post". Now, funds transfer and receiving can be made at the destination branch all over the country.

3.1.2 ATMs and EFTPOS Terminals

FIGURE 2 : NUMBER OF ATMs AND EFTPOS TERMINALS



Source : Bank of Thailand

Both ATMs and EFTPOS terminals grew rapidly last year, due to strong competition of retail funds transfer service, both by commercial banks and non-bank institutions.

- In 2005, there were 15,784 ATMs, increased from 10,602 machines in 2004, or 49 percent, compared with an average growth rate of merely 16 percent in 2004. This was due mainly to service expansion by most banks to accelerate their service areas coverage. Installation of new ATMs enhanced competitiveness for commercial banks in relation to non-bank institutions, holding competitive edge in terms of easy access to services, without time constraints.

ATMs are now considered an efficient electronic channel, as substitute for counter services, notably funds transfer and bill payment. It is, in fact, an option for branch expansion among commercial banks, with relatively low

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operating cost. ATMs operate around the clock, being connected widely among banks, covering customers of a respective bank and other banks. Online Retail Funds Transfer (ORFT) via ATMs has become more popular among customers, growing as high as 32 percent in 2005, with total 28 million transactions, up from 19 transactions in 2004. Not only did ATMs enhance competitiveness among banks, but they also provide handsome fee income for banks.

- There were 102,000 *EFTPOS terminals* in 2005, increased from total 84,000 terminals in 2004, or 21 percent, compared with an average growth rate of only 11 percent in 2004, indicating greater popularity of credit and debit cards usage in lieu of cash. The shift was in line with strategic objective of Bank of Thailand to promote electronic payment, instead of cash and cheque. Aside from the cheaper *EFTPOS* terminal, other factors contribute to rapid expansion of *EFTPOS terminals* included the promotion of card payment services by acquiring banks, as well as promotion of credit and debit cards among commercial banks and non-bank institutions.

Certain service locations that provide the highest number of *EFTPOS terminals* were food shops and restaurants, accounting for a share of 20 percent, as followed by supermarkets of 14 percent, petrol stations and hotels of 12 percent, and the rest were department stores and others.

3.1.3 ATM, Debit and Credit Cards

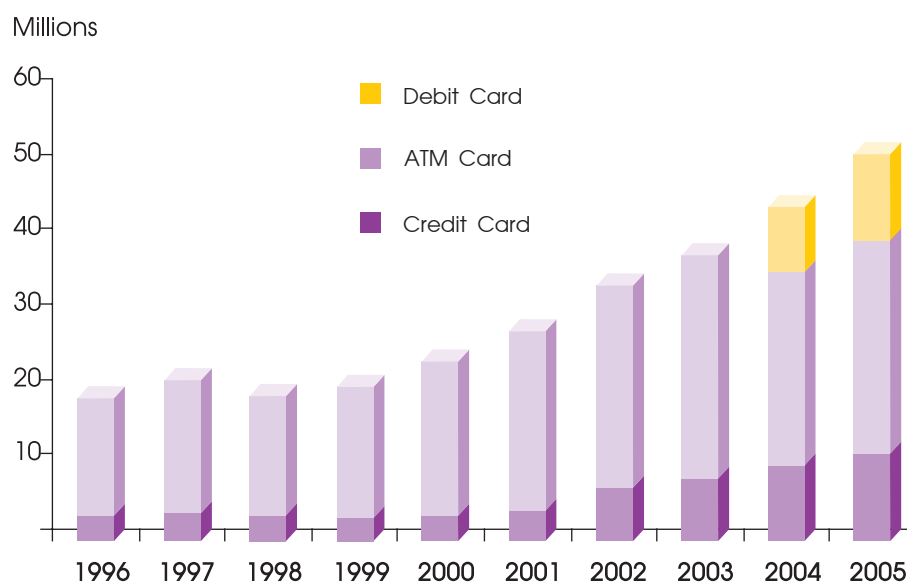
- There were total 28.7 million *ATM cards* in 2005, up 12 percent from the total 25.4 million ATM cards in 2004.
- There were total 11.0 million *debit cards* in 2005, increased 31 percent from the total of 8.4 million cards in 2004.

In 2005, ATM cards showed the highest proportion of 58 percent of all plastic cards. The proportion of ATM cards, in fact, dropped from 60

percent in the year before. The second highest share belonged to debit cards, standing at 22 percent, up from 20 percent from the previous year, and the share of credit cards remained unchanged from the year before at 20 percent.

The decreasing growth rate of ATM cards last year was attributed to promotion of debit cards by commercial banks, due to multi-purpose functions of debit cards. Aside from funds transfer and cash withdrawal, debit cards can be used for purchase at EFTPOS terminals, similar to credit card, which markedly reduce withdrawal of cash for payment of goods and services. Quicker and more convenient services can be provided for customers, thereby enhancing efficiency in payment systems of the country. Now, many commercial banks have promoted issuance of debit cards in lieu of the traditional ATM card, through promotional campaigns and expansion in *EFTPOS terminals*. These would encourage more customers to use debit cards for payment. In the future, debit cards are expected to grow faster than ATM cards.

FIGURE 3 : COMPARISON OF ATM DEBIT AND CREDIT CARDS



Source : Bank of Thailand

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Table 1: Types of Transactions via ATM and Debit Cards Sorted by Volume and Value

	Volume		Value	
	Transactions (millions)	Percentage (%)	Value(billion baht)	Percentage (%)
ATM Cards				
- Cash withdrawal	473	89	1,847	80
- Funds transfer	39	7	394	17
- Goods and services payment	7	1	24	1
- Cash deposit	5	1	56	2
- Others	8	2	0.3	0
Total	532	100	2,321	100
Debit Cards				
- Cash withdrawal	200	76	994	56
- Funds transfer	33	13	677	38
- Goods and services payment	9	4	25	1
- Cash deposit	6	2	70	4
- Others	14	5	0	0
Total	262	100	1,766	100

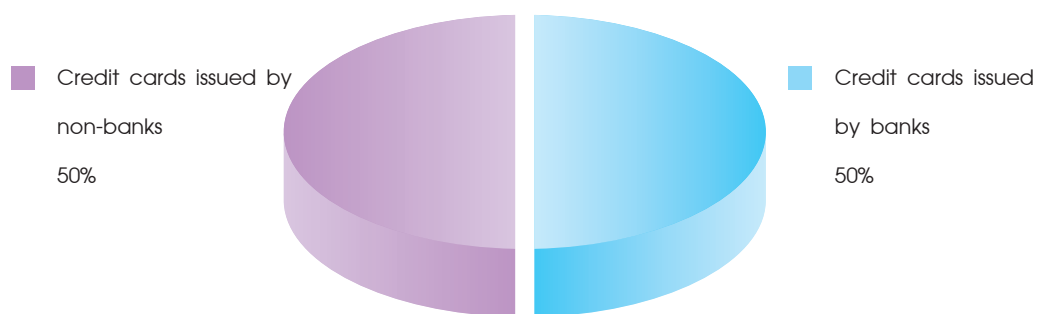
Source: Bank of Thailand

- There were 9.9 million *credit cards* issued in the market, increased from 8.6 million cards in 2004, or 15 percent. Of these, 4.97 million cards were issued by commercial banks, and 4.98 million cards by non-bank institutions⁴.

In 2005, total credit card transactions increased from 319 to 419 transactions, showing an increase by 31 percent. The value of transactions increased 17 percent from Baht 536 million to Baht 628 million .

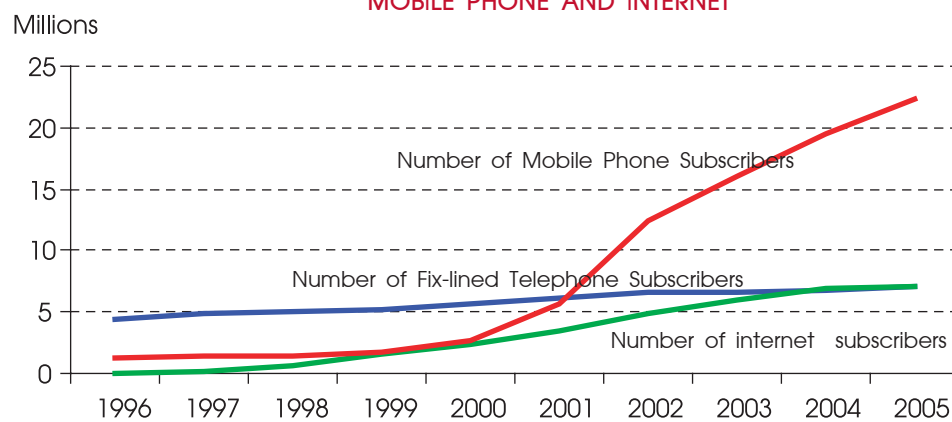
⁴ Non-Bank Institutions that issue credit cards include KTC Co., Ltd., Krungsriyudhya Card Co., Ltd., General Card Services Co., Ltd., Cetelem (Thailand) Co., Ltd., Diners' Club (Thailand) Co., Ltd., Tesco Card Services Co., Ltd., American Express (Thai) Co., Ltd., Aeon Thana Sinsap (Thailand) Plc., AIG Card (Thailand) Co., Ltd., and Capital OK Co., Ltd.

FIGURE 4 : RATIO OF CREDIT CARDS ISSUES BY BANKS AND NON-BANKS



Source : Bank of Thailand

FIGURE 5 : SUBSCRIBERS OF FIXED-LINE TELEPHONE, MOBILE PHONE AND INTERNET



Source : Bank of Thailand

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3.1.4 Subscribers of Fixed-line Telephone, Mobile Phone and Internet

Through e-banking, consumers can make payments by themselves, through landline phone banking, internet banking, and mobile banking. Now, electronic banking services have been expanding very rapidly, especially mobile phone banking, providing ample room for competition by both commercial banks and non-bank institutions, due to presence of facilitating infrastructure, availability of service providers, and the growing number of subscribers.

For fixed-line phone services, there are now three service providers in the market. TOT Corporation provides services in Greater Bangkok area and the regions, TRUE Corporation Plc. provides services in Greater Bangkok areas only, while TT&T Plc. provides services in the regions only. In 2005, the proportion of landline phone subscription equaled 11 percent of total population of the country, or approximately 7.0 million numbers, increased 3 percent from the record of 6.8 million numbers in the year before. The increased subscription mainly stemmed from upcountry telephone expansion, which has been implemented continuously throughout these recent years. The extension of landline was, in fact, badly impacted by the surging popularity of cell phone services, considered convenient and cheap. In addition, extension of cell phone service network can be conducted at the lower costs than that of landline phone. However, a main strength of landline phone is the cheaper and more efficient access to internet service, notably the currently popular high-speed internet.

Mobile phone service: There are now six service providers in the market, i.e., Advance Info Service (AIS) Plc., Total Access Communication (DTAC) Plc., TOT Corporation Plc., Digital Phone Co., Ltd., TRUE Corporation Plc., and CAT TELECOM Plc. There were 31.3 million subscribers in 2005, or approximately 50 percent of total population, representing an average

growth rate of 14 percent, slightly lower than the year before, showing an average growth rate at 22 percent, due to the national economic slowdown, oil price fluctuation and rising inflation.

Most of the present cell phone subscribers, totaling 26.04 million, were in prepaid system, or 83 percent of all subscribers, compared with subscribers of the postpaid system of only 5.26 million subscribers, or 17 percent of total subscribers.

Internet service: The number of internet service provider (ISP) has increased rapidly, when the National Telecommunication Commission (NTC) has started granting license, to replace the ones provided under concession of the Communications Authority of Thailand (now CAT TELECOM Plc.), NTC license was primarily granted to 10 ISP, both new and existing ones, including those 18 existing ISP, whose licenses would expire in 2005-2010.

In 2005, the number of internet subscribers increased from 6.97 to 7.08 million, representing an average growth rate of 14 percent. Despite the slow growth rate, internet subscription has increased continuously, following the shift from normal internet to broad-band internet, including the lower subscription fees.

When compared to internet subscription in foreign countries, the level of internet subscription in Thailand was still relatively low, or approximately 12 percent of total population, while the figure were average of 60 and 34 percent, in Asian neighbors, especially Korea and Malaysia, respectively. In some developed countries, internet subscription is as high as 55 percent in USA and UK. As a result, it can be noted that there is still an ample room for growth of internet services in Thailand, including some related businesses, notably internet banking service.

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3.2 Use of Cash

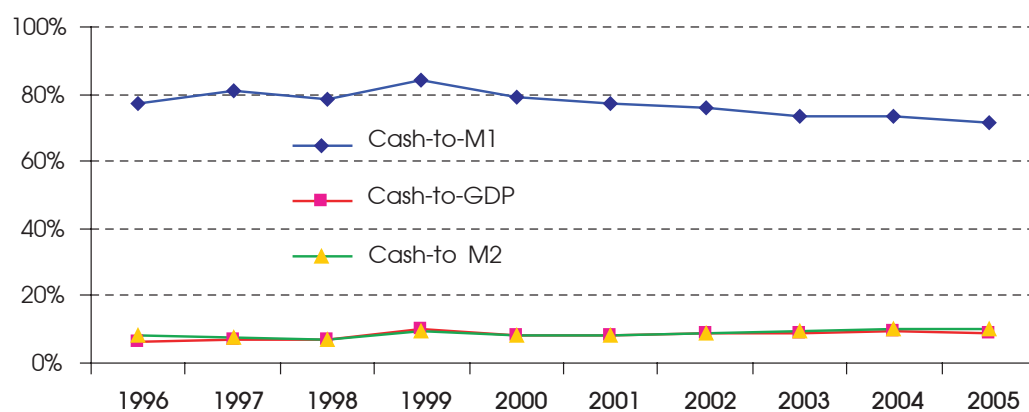
The volume of cash in circulation per capita has been increasing in line with economic growth or expansion in Gross Domestic Product (GDP). Cash in circulation per capita increased from Baht 9,666 in 2004 to Baht 10,093 in 2005, whereas per capita GDP increased from Baht 104,946 to Baht 113,866, respectively (Table 2).

Table 1: Currency in circulation per capita and Gross Domestic Product per capita (GDP per capita)

	2542	2543	2544	2545	2546	2547	2548
Currency in Circulation per capita (Baht)	7,559	6,493	7,004	7,807	8,545	9,666	10,093
GDP per capita at current price (Baht)	75,204	79,566	82,400	86,794	93,991	104,946	113,866

Source: Bank of Thailand

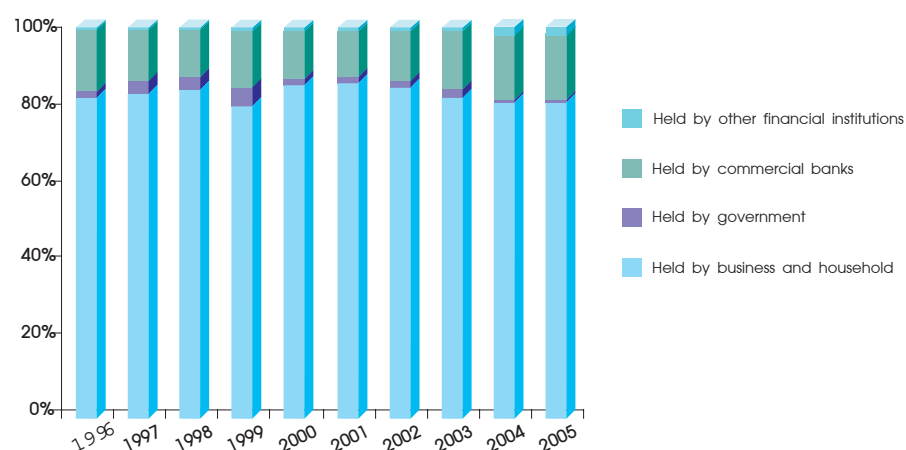
FIGURE 6 : CASH COMPARED TO GDP, M1 AND M2



Source : Bank of Thailand

A comparison of cash in circulation to GDP (Figure 6) has remained constant at 9 percent since 2002. The composition of cash (Figure 7) showed only slight increase of currency in circulation held by business and household and currency held by commercial banks. The currency in circulation held by government had been decreasing continuously during 2003-2004, following the new cash management policy adopted by Bank of Thailand, canceling the role of Provincial Finance Office, as representative of BOT for cash deposit and withdrawal services to commercial banks in the areas nearby. Commercial banks were assigned to responsible for their own cash management, resulting in the decline in volume of cash maintained at the Provincial Finance Office. The comparison of volume of cash to M1⁵, indicating trend of cash usage compared to other modes of payments through savings accounts at commercial banks (Figure 8), showed the falling trend from 73 percent in 2004 to 72 percent in 2005. These showed a slight increase in use of other modes of payment through savings accounts via commercial banks.

FIGURE 7 : COMPOSITION OF CURRENCY



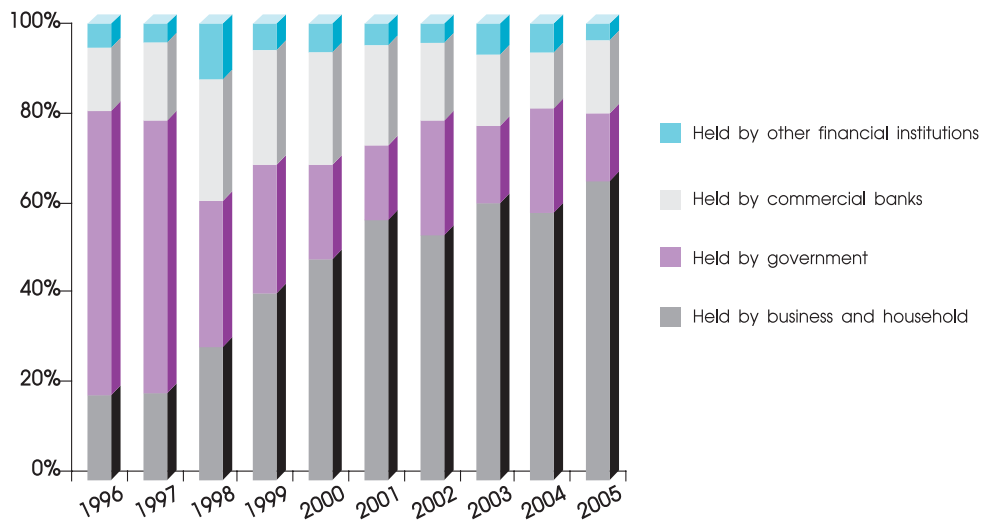
Source : Bank of Thailand

⁵ M1 refers to cash in circulation in the market, savings deposits of business and households at commercial banks

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FIGURE 8 : COMPOSITION OF DEMAND DEPOSITS

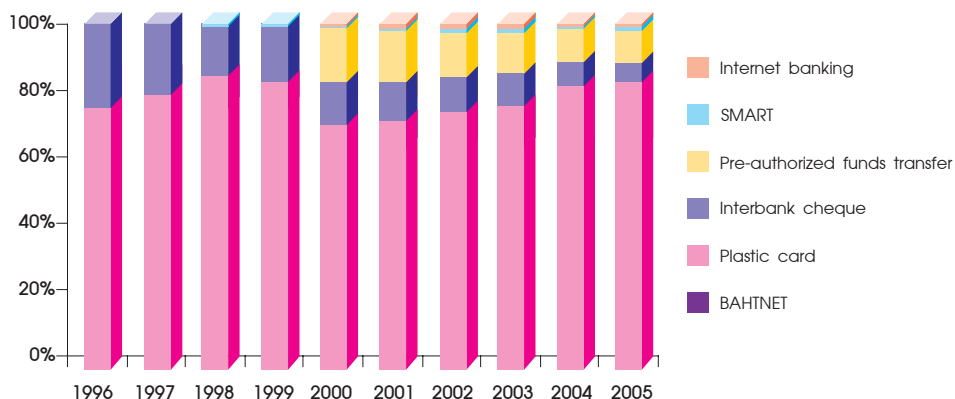


Source : Bank of Thailand

3.3 Non-cash Payment Instruments

Non-cash payment systems and non-cash payment instruments consist of high-value funds transfer system (BAHTNET- Bank of Thailand Automated High-value Transfer Network) and retail funds transfer system. The latter include Interbank Cheque Clearing System, Low-value funds transfer system (SMART-System for Managing Automated Retail Funds Transfer), pre-authorized direct credit/direct debit, i.e., ATM card, debit card, credit card, and internet banking.

FIGURE 9 : COMPARISON OF VARIOUS PAYMENT INSTRUMENT IN VOLUME OF TRANSACTION

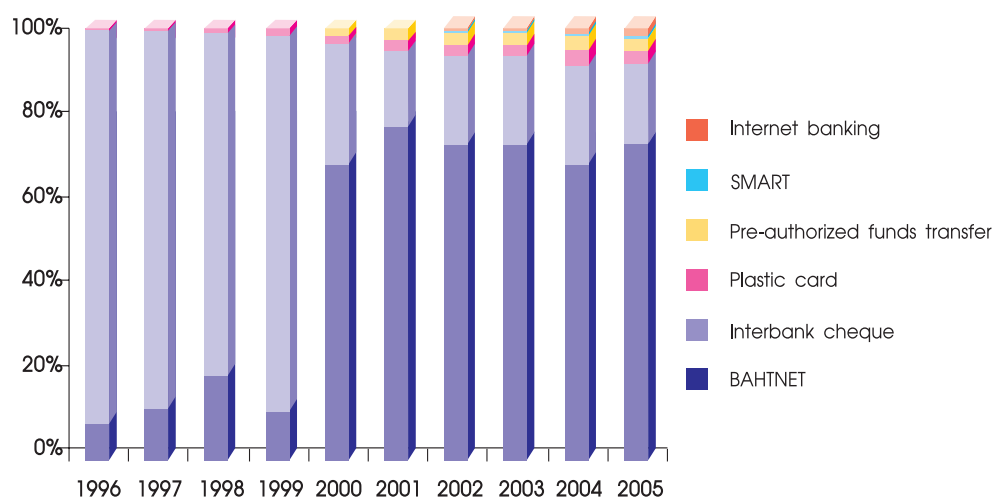


Source : Bank of Thailand

Both value and volume of payment transactions via all instruments as mentioned have been increasing over time. Payments through plastic cards remain the most popular ones (Figure 9). They were increasing continuously and tending to replace other payment instruments. In 2005, the proportion of plastic cards slightly increased from 81 percent in 2004 to 82 percent. Meanwhile, Interbank cheque clearing and pre-authorized funds transfer tended to drop slightly, although the transaction records have increased.

When compared to transaction values (Figure 10), funds transfer through BAHTNET system showed the highest proportion, up from 68 percent in 2004 to 73 percent in 2005, due to the increasing Interbank funds transfers, including Third Party Funds Transfer, following greater use of the Government Fiscal Management Information System (GFMIS). This was followed by Interbank cheque clearing and plastic cards, now showing falling proportions, respectively, from 23.4 and 4 percent in 2004 to 19.3 and 3 percent in 2005. There was no significant changes for funds transfer through pre-authorized funds transfer, plastic cards and internet banking service.

FIGURE 10 : COMPARISON OF VARIOUS PAYMENT INSTRUMENTS IN VOLUME OF TRANSACTION



Source : Bank of Thailand

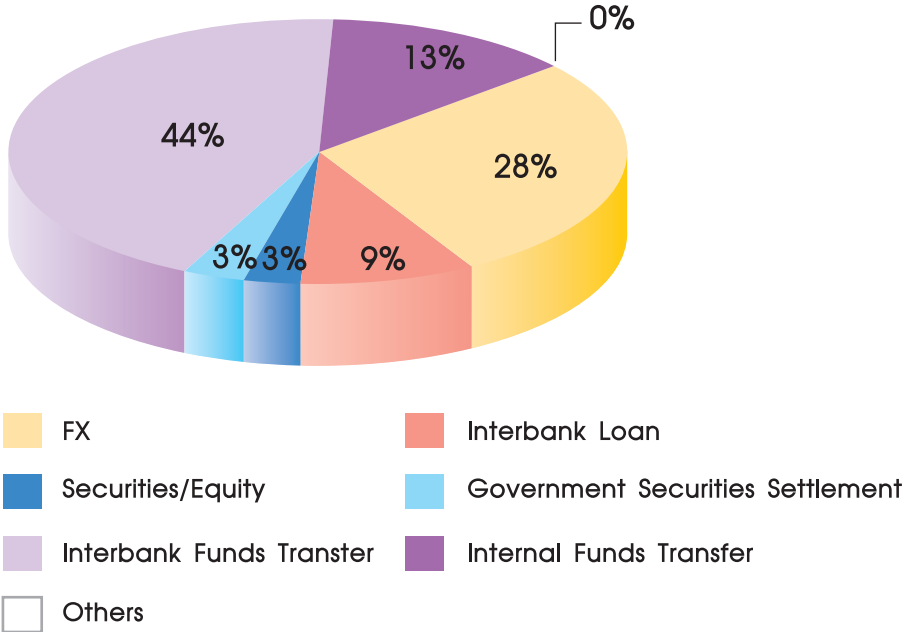
3 Data and Statistics in Payment Systems

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3.3.1 BAHTNET

The average funds transfer through BAHTNET (Bank of Thailand Automated High-value Transfer Network) increased from an average record of Baht 300,000 million in 2004 to Baht 430,000 million in 2005. The average daily funds transfer record increased from 5,000 transactions in 2004 to 6,000 transactions in 2005. There were 7 major types of funds transfer through BAHTNET, classified by types of business, i.e., Interbank funds transfer, Foreign Exchange transaction, Interbank loan, Internal funds transfer, Securities transaction, Government securities settlement, and others.

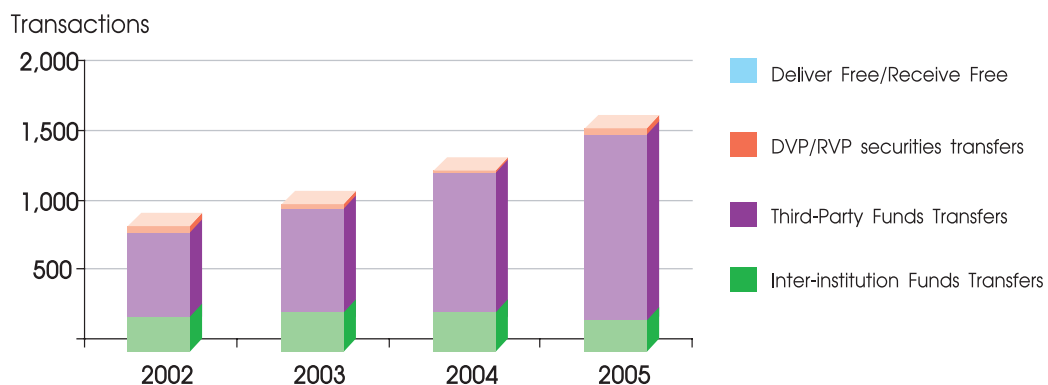
FIGURE 11 : VALUE OF FUNDS TRANSFER VIA BAHTNET CLASSIFIED BY BUSINESS TYPE



Source : Bank of Thailand

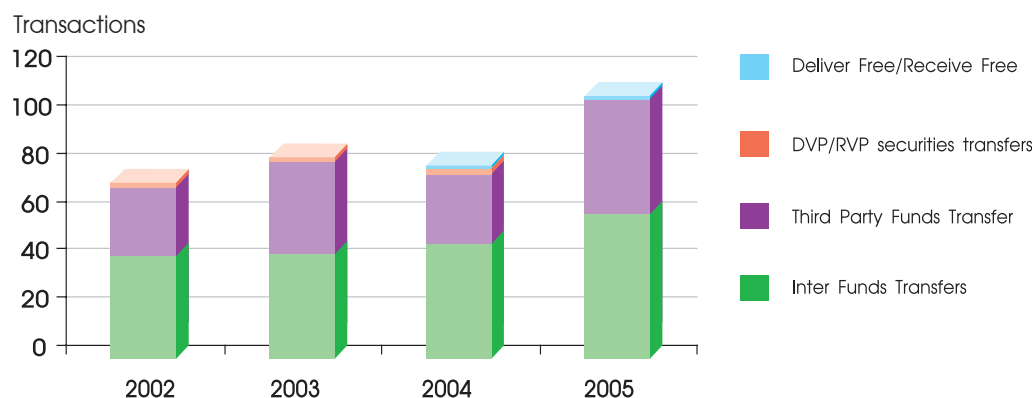
In 2005, the highest value of funds transfer transaction through BAHTNET was Interbank funds transfer, accounting for a share of 44 percent of all types of funds transfer through BAHTNET. This was followed by FX transaction, 28 percent, Internal funds transfer, 13 percent, and the rest were Interbank loan, Securities/Equity, Government securities settlement and others, representing the shares of 9, 3, 3 and 0 percent, respectively (Figure 11).

FIGURE 12 : VOLUME OF FUNDS AND SECURITIES TRANSFER VIA BAHTNET SYSTEM



Source : Bank of Thailand

FIGURE 13 : VALUE OF FUNDS AND SECURITIES TRANSFER VIA BAHTNET SYSTEM



Source : Bank of Thailand

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When compared volume and value of funds and securities transfer, it is interesting to note that Interbank funds transfer dropped from 187,000 transactions in 2004 to 128,000 transactions in 2005. Meanwhile, this year's transaction value rose from the year before by Baht 13 Trillion. Third party funds transfer increased from 1 million transactions to 1.3 million transactions, and the values increased by Baht 19.2 trillion, as a result of the change in transfers of budget outlays from the Department of Comptroller's General to other government agencies, shifting from Third party funds transfer to GFMS.

Volume of Securities transfer, both Delivery Versus Payment and Deliver Free transactions, through BAHTNET, increased from 20,000 and 1,600 transactions in 2004 to 30,000 and 2,000 transactions in 2005, respectively. Securities transfer settlement (DVP) increased from the record of 2004 by Baht 20,000 million, thanks largely to greater attention to short-term debt instruments. This included market anticipation for the upward interest adjustment, which were mostly Interbank securities transfer.

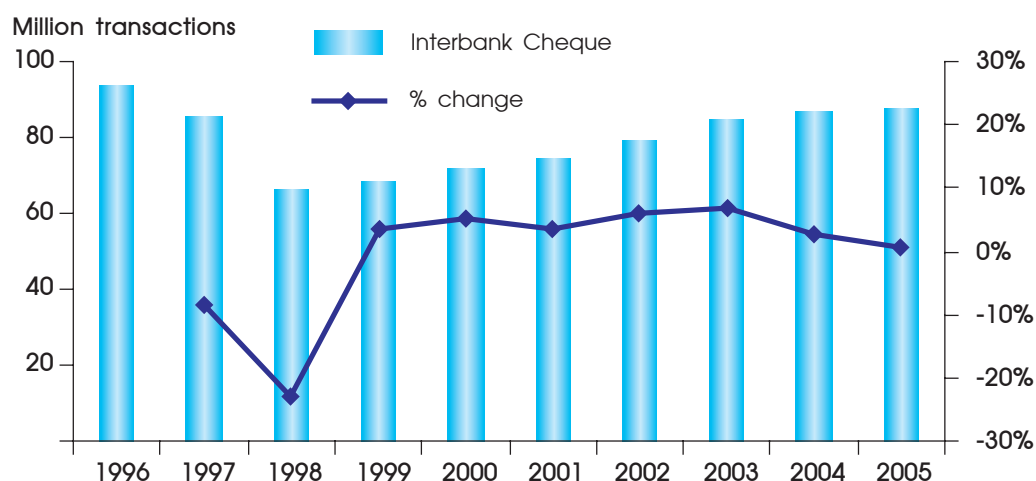
3.3.2 Interbank Cheque Clearing

Interbank Cheque Clearing system consists of Electronic Cheque Clearing System (ECS), Provincial Cheque Clearing System, and Bill for Collection (B/C) Clearing System.

The daily record for use of cheque was 356,592 items in 2005, equal to an average value of Baht 113 billion a day. The average volume of cheque use per capita was very close to the year before, i.e., 1.4 items per year. An average value of cheque was Baht 287,251.

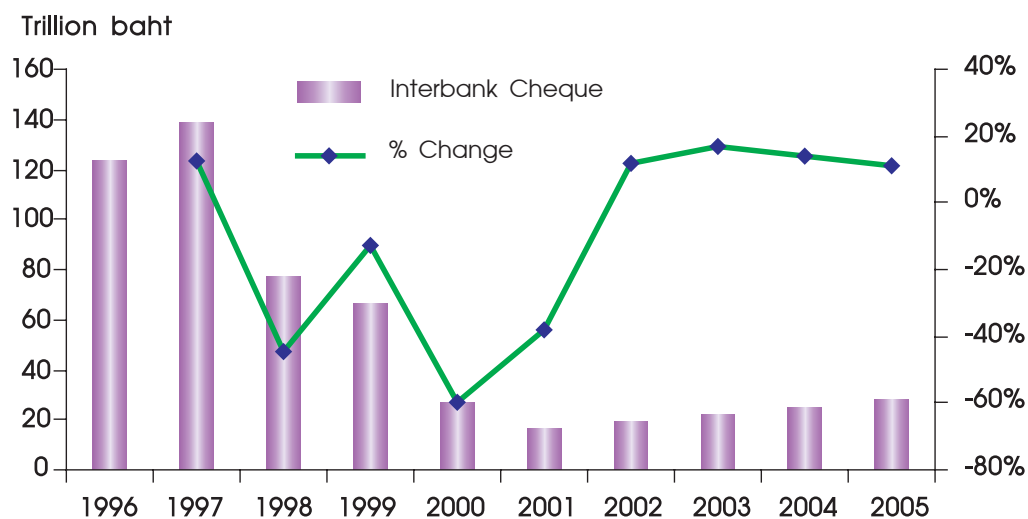
The volume of Interbank cheque clearing increased from 86.9 million items in 2004 to 87.4 million items in 2005. Although the overall volume of cheque increased in line with growing economy, it is worth noting that the volume of cheque use dropped from 3 percent in 2004 to merely 1 percent in 2005 (Figure 14).

FIGURE 14 : VOLUME OF INTERBANK CHEQUE



Source : Bank of Thailand

FIGURE 15 : VALUE OF INTERBANK CHEQUE



Source : Bank of Thailand

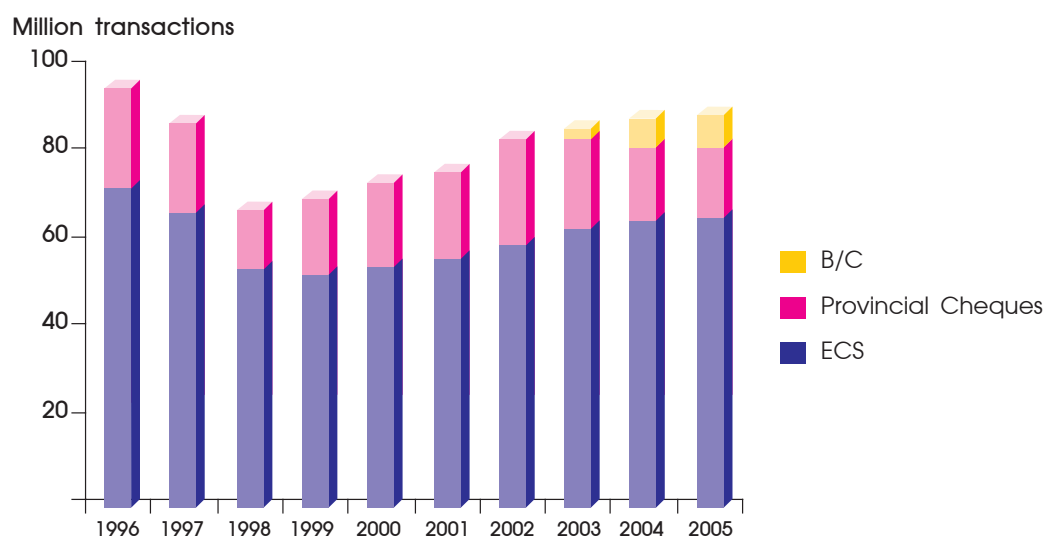
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The value of Interbank cheque clearing was also increase at a slower rate. It grew merely 11 percent in 2005, from 14 percent recorded in 2004 (Figure 15).

The successful reduction of B/C clearing period all over the country from 6 business days to 3 business days since November 2003 encouraged most member banks to switch from clearing service via Provincial Cheque Clearing System of payer bank to B/C-3D system. This resulted in an increase in volume of B/C Clearing by 3 percent, to a total of 6.8 million items in 2005, while the volume of Provincial Cheque Clearing System dropped slightly by 0.02 percent in 2005 (Figure 16).

FIGURE 16 : VOLUME OF INTERBANK CHEQUE BY TYPES



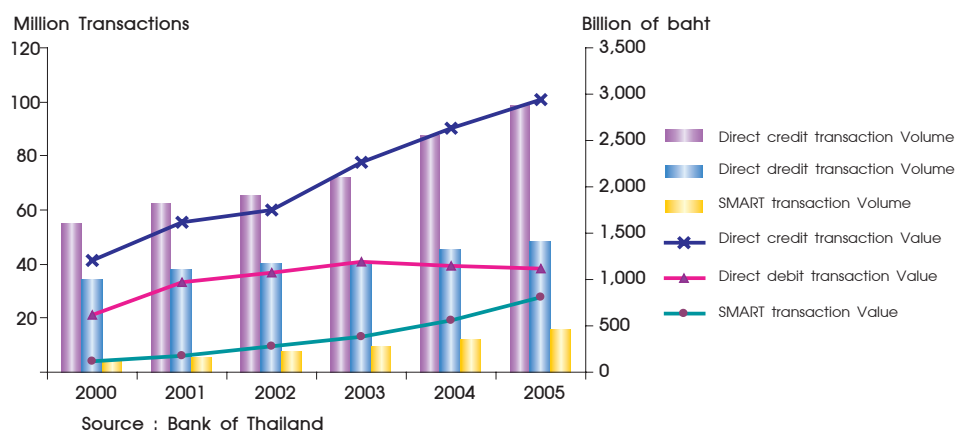
Source : Bank of Thailand

The volume and value of cheque transactions in the Greater Bangkok Area (ECS) in 2005 remained close to the record of the year before, or 73 and 90 percent, respectively. Whereas volume and value of Inter-provincial Cheque Clearing recorded the second highest share, standing at 19 and 9 percent, respectively. Although both volume and value of B/C Clearing increased by 3 and 9 percent, respectively, the proportion to total cheque transactions equaled merely 8 and 1 percent, respectively.

3.3.3 Pre-authorized Direct Debit/Direct Credit

Pre-authorized direct debit/direct credit are provided for retail funds transfer, under pre-authorized with banks, under certain payment schedules, and/or a large amount of transactions. These include **pre-authorized transactions within the same bank**, such as **Direct Credit**, i.e., salary, wage, dividend, and tax rebate, and **Direct Debit**, i.e., payment for utilities, insurance premiums and credit card expenses, etc. Another type is **pre-authorized Interbank funds transfer**, or **SMART system**, provided by BOT. Now, only Direct Credit service is provided.

FIGURE 17 : TRANSACTION VOLUME AND VALUE OF PRE-AUTHORIZED FUNDS TRANSFER

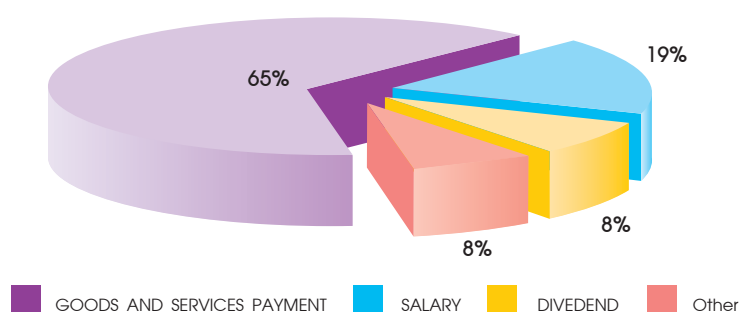


In 2005, pre-authorized funds transfer valued approximately Baht 4.85 Trillion, or approximately 163 million transactions, increased 12 percent from the year before. Direct Credit accounted for the highest record, both volume and value, or 60 percent, followed by Direct Debit, accounted for a share of 30 percent in volume, and 23 percent in value. SMART recorded total volume of 10 percent, and value of 17 percent, respectively.

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FIGURE 18 : PROPORTION OF VALUE OF FUNDS TRANSFER VIA SMART



Source : Bank of Thailand

Volume of funds transfer via SMART, eg., salary and wage payments, showed the highest share of 48 percent, then followed by goods and services payments at 32 percent. Value of funds transfer were 65, 19, 8, and 8 percent for goods and services payments, salary and wage payments, dividend payments and others payments respectively .

Direct Credit was mostly transferred for salary and wage payment, representing the highest record in both value and volume of 78 and 93 percent, respectively.

Almost all Direct Debit was for goods and services payment, with value and volume of 99.8 and 99.0 percent, respectively.

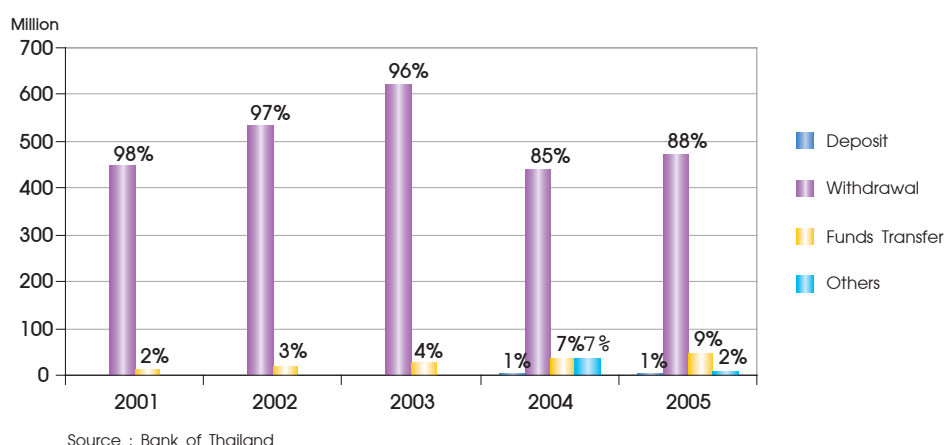
3.3.4 Plastic Cards

ATM cards are the most usage card of all plastic cards, recorded 535 million transactions, accounted for Baht 2.4 trillion in 2005.

• **ATM cards**

Volume of ATM cards increased by 6 percent, from 507 million transactions in 2004 to 535 million transactions in 2005. Meanwhile value of ATM transaction increased 17 percent, from Baht 2.1 billion, in 2004, to Baht 2.4 trillion in 2005.

FIGURE 19 : ATM CARDS TRANSACTION VOLUME



Although most of ATM transactions were cash withdrawal, retail funds transfer via ATMs showed good trend, increased from 7 to 9 percent of the year before, indicated a possibility of higher electronic funds transfer via ATM cards. These included internal funds transfer, interbank funds transfer (Online Retail Funds Transfer-ORFT), and funds transfer for goods and services payment via ATMs, including bill payments and top-up for e-money and prepaid cell phone.

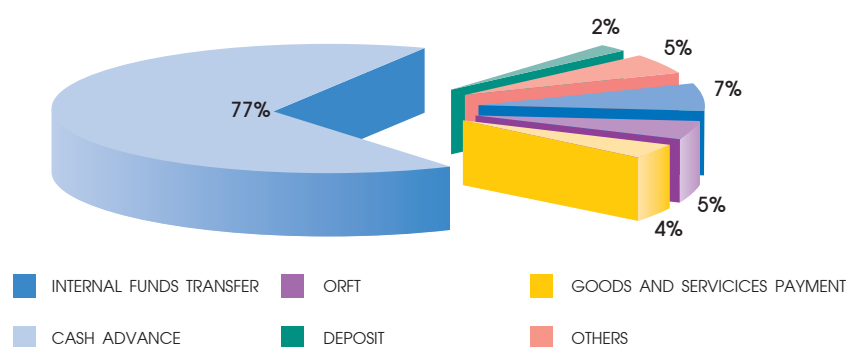
The above trend would eventually lead to the reduction of cash usage, and make funds transfer and payment in the system quicker and much more efficient.

3 Data and Statistics in Payment Systems

6 6 • Debit Cards

There were 262 million transactions through debit cards in 2005, up 23 percent from the year before, with total record of 211 million transactions. Total value of debit cards was approximately Baht 1.8 billion in 2005, increased 24 percent from the total of Baht 1.4 billion in 2004.

FIGURE 20 : DEBIT CARD TRANSACTIONS VOLUME



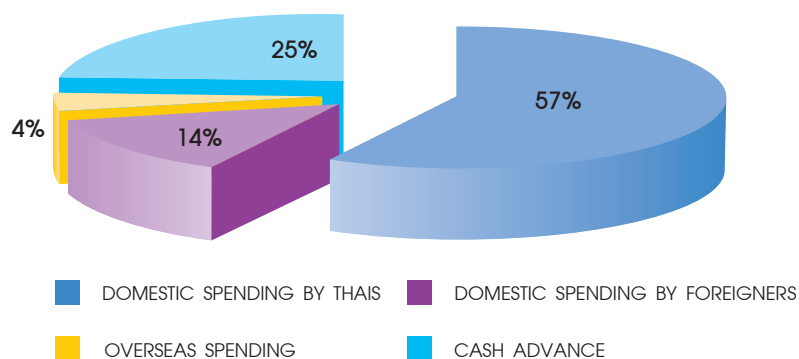
Source : Bank of Thailand

The share of cash withdrawal through debit cards dropped from 82 to 77 percent during 2004 and 2005. Although cash withdrawal through debit cards previously represented the highest share, its decreasing trend should be noted, due in large part to promotions among commercial banks to encourage cardholders to increasingly use debit cards for payment at EFTPOS. However, goods and services payment with debit cards represented a share of only 4 percent because most cardholders used debit cards as an ATM card only. As a result, relevant parties should launch public relations campaigns to inform the public of another function of debit cards for goods and services payment at EFTPOS, instead of cash withdrawal for payment. This would lead to the more efficient and effective use of a payment instruments.

• **Credit cards**

Credit cards spending in 2005 totaled Baht 628 billion, increased 17 percent from total spending of Baht 536 billion in the year before. The share of credit cards spending in domestic dropped from 76 to 72 percent during the same period, due to the drop in credit cards spending by foreign visitors from 19 to 14 percent. Credit cards spending by Thai people remained unchanged at 57 percent. The share of credit cards spending by Thai people in foreign countries increased from 3 to 4 percent, totaled Baht 25 billion. The share of cash advance through credit cards increased from 21 to 25 percent, valued at Baht 154 billion, up 27 percent from last year's record at Baht 121 billion.

FIGURE 21 : PROPORTION OF CREDIT CARD TRANSACTIONS IN 2005



Source : Bank of Thailand

Table 3: Value of credit cards transactions by type in 2005

Type of credit cards	volume (mil. cards)	Domestic use (bil. Baht)			Overseas use (bil. Baht)	Cash advance (bil. Baht)	Total value (bil. Baht)
		Used by locals	Used by foreigners	TOTAL			
Commercial banks	4.97	207.42	80.38	287.80	13.69	115.96	417.45
Non-bank institutions	4.99	155.94	5.90	161.84	11.12	38.12	211.08
Total	9.96	363.36	86.28	449.64	24.81	154.08	628.53

Source: Bank of Thailand

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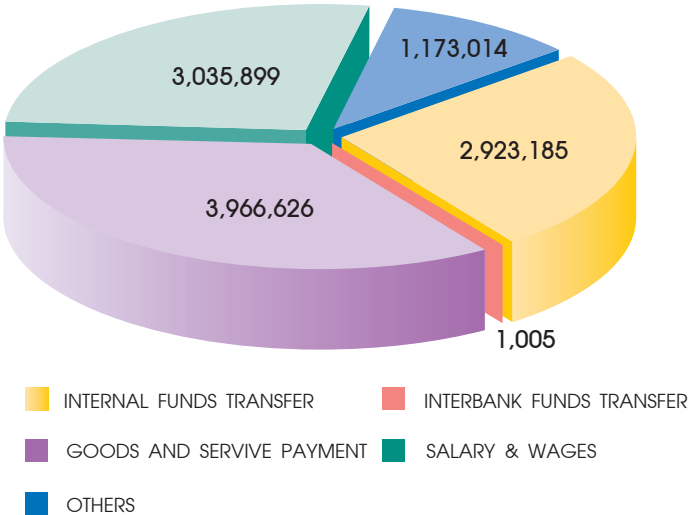
6 8 3.3.5 Internet Banking

Number of internet Banking users increased from 1,504,385 persons in 2004 to 1,780,431 persons in 2005, following promotions for easy and convenient services by commercial banks. Value of internet Banking transactions increased 107 percent, from the total of Baht 1,139 billion in 2004, to Baht 2,722 billion in 2005.

The proportion of volume of internet Banking service included goods and services payment, representing a share of 36 percent, pay-roll and wage payment, 27 percent, internal funds transfer 26 percent, others 11 percent, and Interbank funds transfers 0.01 percent (Figure 22).

In terms of value, internal funds transfer represented the highest share of 54 percent, followed by goods and service payment, 43 percent. The rest were pay-roll and wage payment, 2.3 percent, others, 0.6 percent and value of Interbank funds transfer remained minimal at 0.003 percent.

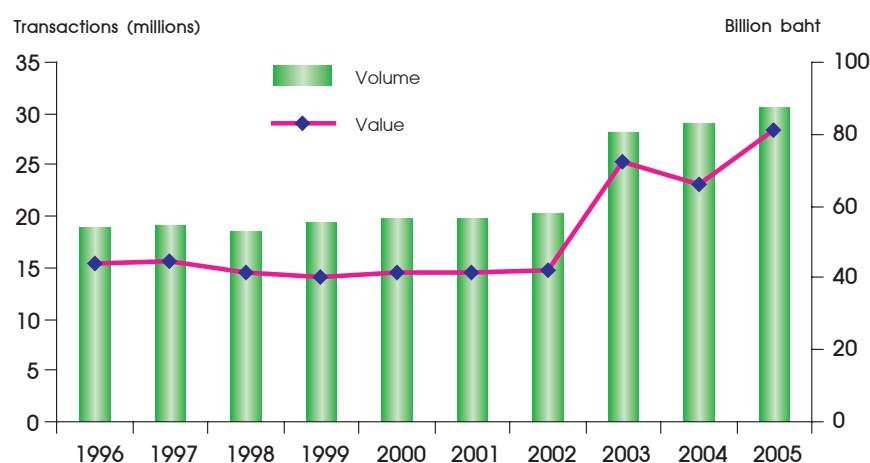
FIGURE 22 : INTERNET BANKING TRANSACTIONS VOLUME



Source : Bank of Thailand

3.3.6 Postal Payment Services

FIGURE 23 : VOLUME AND VALUE OF FUNDS TRANSFER VIA PAY AT POST SERVICE



Source : Bank of Thailand

Since the incorporation of the Post and Telegraph Department to Thailand Post Co.,Ltd. in August 2003, its payment service has been growing very rapidly, and tended to become main sources of income for Thailand Post Co.,Ltd. in the future.

At present, Thailand Post Co.,Ltd. has expanded and diversified its payment services, making use of its strengths of nationwide branches covering all areas, by connecting all post offices through an online system. It then expanded to an automated counter service, under the name of "CA Post", incorporated both online postal money order and "Pay at Post" services into a single service.

Funds transfer and payment via Thailand Post Co.,Ltd. markedly expanded in 2005 in both volume and value. Total transactions increased to 30.63 million, from 29.15 million in 2004, while the value surged by 23 percent, from Baht 65.82 billion transactions in 2004 to Baht 81.17 billion transactions in 2005. This is mainly due to the change to automated counter service, in

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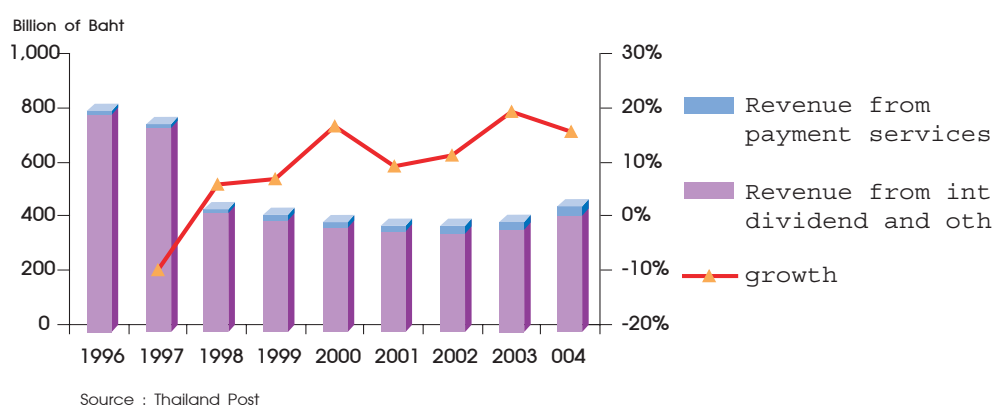
particular, automated money order service which can accomplish funds transfer to receivers in 15 minutes. It can accommodate the highest amount of money transferred as high as Baht 50,000 each, and the receiver can use only their national Identification Card as evidence to take out the transferred money. This service provides impressive convenient to customers which lead to significantly increased transactions from 27.9 million transactions in 2004 to 29.6 million transactions in 2005.

Other modes of payment, i.e., domestic postal order and foreign postal money order, showed a drop in transaction volume for 17 and 4 percent, respectively, during the same period. The drop in use of domestic postal order should have been due to greater uses of an online postal money order, which has become much quicker and more convenient. As for foreign postal money order service, Thailand Post Co.,Ltd. work as an agent for Western Union, notably an urgent electronic funds transfer via more than 117,000 offices of Western Union in 197 countries worldwide, considered as substitute for foreign postal money order at present.

3.4 Revenue from Payment Services

Revenue from payment services among commercial banks have continued to increase from Baht 29.8 billion in 2004 to Baht 34.4 billion in 2005, representing an average growth rate of 15 percent. The annual growth rate, however, dropped slightly from 2004's record at 19 percent (Figure 24). This would due to the greater role of non-bank institutions in funds transfer and payment services, thus resulting in lower fee income for commercial banks as noted earlier.

FIGURE 24 : REVENUE FROM PAYMENT SERVICES

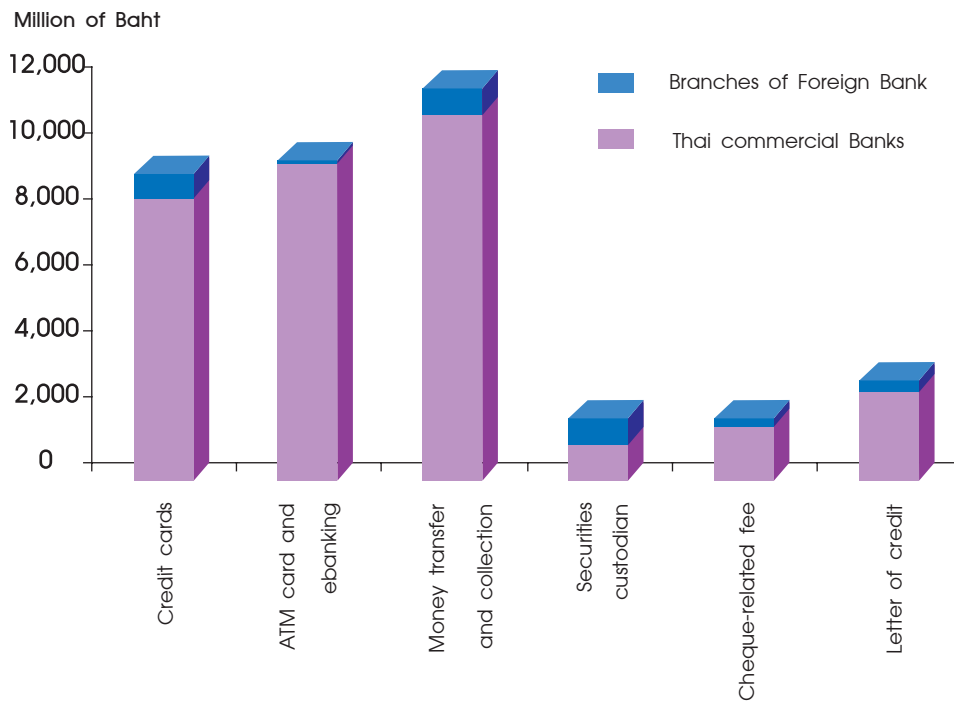


Revenue from payment services among Thai commercial banks have been derived from three major services, i.e., money transfer and collection, ATM card and electronic banking, and credit card, representing shares at 33, 29 and 25 percent, respectively. Meanwhile revenue from payment services by branches of foreign banks was mostly derived from securities custodian and custody, money transfer and collection, and credit card, representing shares of 28, 27 and 24 percent, respectively (Figure 25).

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FIGURE 25 : REVENUE FROM PAYMENT SERVICES, CLASSIFIED BY TYPES IN 2005



Source : Bank of Thailand

4

Abbreviations

PSC	Payment Systems Committee
BOT	Bank of Thailand
SNPC	Subcommittee on National Payments Cooperation
APACS	Association for Payments Settlement Services
ATM	Automated Teller Machine
BAHTNET	Bank of Thailand Automated High-value Transfer NETWORK
BIS	Bank for International Settlements
B/C	Bill for Collection
CPSS	The Committee on Payment and Settlement Systems
CSS	Central Settlement System
DVP	Delivery versus Payment
ECB	The European Central Bank
ECS	Electronic Cheque Clearing System
EFTPOS	Electronic Funds Transfer at Point of Sale
E-money	Electronic money
EMEAP	The Executives' Meeting of East Asia-Pacific Central Banks
EMV	Europay, MasterCard and VISA
EPC	The European Payments Council

4 Abbreviations

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FSAP	Financial Sector Assessment Program
GDP	Gross Domestic Product
GFMS	Government Fiscal Management Information System
ILF	Intraday Liquidity Facilities
IMF	International Monetary Funds
ITMX	Interbank Transaction Management and Exchange
MFT	Multilateral Funds Transfer
ORFT	Online Retail Funds Transfer
ROSCs	Reports on the Observance of Standards and Codes
RTGS	Real Time Gross Settlement
SEPA	Single Euro Payment Area
SIPS	Systemically Important Payment Systems
SMART	System for Managing Automated Retail Funds Transfer
STP	Straight Through Processing
SWIPS	System-Wide Important Payment Systems
TSD	Thailand Securities Depository Co., Ltd.

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Table 1 : Basic statistical data

	2000	2001	2002	2003	2004	2005 ^P
Population (millions) ¹	61.87	62.30	62.80	63.08	61.97	62.42
GDP current price (billion baht) ²	4,922.7	5,133.5	5,450.6	5,929.0	6,503.5	7,103.0
GDP per capita (baht)	79,565.72	82,399.71	86,793.68	93,991.36	104,945.75	113,793.05
Exchange rate vis-vis US\$ (at year-end)	40.16	44.48	43.28	41.50	39.20	41.17

Sources : Bank of Thailand, Department of Provincial Administration, National Economic & Social Development Board

¹ Department of Provincial Administration adjusted figure of year 2004

² National Economic & Social Development Board adjusted figures from year 2000-2004

^P Preliminary Data

Table 2 : Technological infrastructure

	2000	2001	2002	2003	2004	2005
Total fixed network telephone subscribers (millions)	5.67	6.11	6.56	6.61	6.79	7.00
Total mobile telephone subscribers (millions)	3.64	8.00	17.41	22.38	27.37	31.30
Postpaid	3.12	4.84	4.51	4.35	4.99	5.26
Prepaid	0.52	3.16	12.90	18.03	22.38	26.04
Total Internet users (millions)	2.30	3.50	4.80	6.03	6.97	7.08
Penetration rates						
Fixed network telephone (%)	9.16	9.81	10.45	10.48	10.96	11.21
Mobile telephone (%)	5.88	12.84	27.72	35.48	44.17	50.14
Internet (%)	3.72	5.62	7.64	9.56	11.25	11.35

Sources : CAT Telecom Public Company Limited, TOT Public Company Limited, National Electronics and Computer Technology Center

Table 3 : Narrow Money : M1¹ (at year-end, million baht)

	2000	2001	2002	2003	2004	2005 ^P
Currency	475,120	512,471	583,094	661,785	742,269	781,697
Held by government	8,146	9,540	8,977	16,358	1,454	1,045
Held by commercial banks	60,133	62,047	78,087	98,478	126,989	132,648
Held by business and household sector	401,714	436,346	490,277	539,032	598,671	630,553
Held by other financial institutions	5,127	4,538	5,753	7,917	15,155	17,451
Demand deposits	221,273	226,179	293,549	328,620	380,948	385,173
Held by government	47,326	37,845	75,643	57,187	87,860	60,049
Held by commercial banks	55,097	49,792	50,442	51,582	47,948	62,222
Held by business and household sector	104,118	126,932	154,036	197,248	219,818	248,395
Held by other financial institutions	14,732	11,611	13,428	22,603	25,322	14,507
Money supply (M1)	505,832	563,278	644,313	736,281	818,489	878,948
Currency held by business and household sector as % of M1	79%	77%	76%	73%	73%	72%
Demand deposits held by business and household sector as % of M1	21%	23%	24%	27%	27%	28%

Source : Bank of Thailand

¹ Cash in circulation and demand deposits held by business and household sector

^P Preliminary data

Table 4 : Settlement media used by non-banks (at year-end, billion baht)

	2000	2001	2002	2003	2004	2005 ^P
Banknotes and coins ¹	402	436	490	539	599	630
Demand deposits ²	104	127	154	197	220	248
Narrow money supply (M1) ³	506	563	644	736	818	879
Broad money supply (M2) ⁴	5,013	5,228	5,360	5,611	5,907	6,407

Source : Bank of Thailand

¹ Banknotes and coins held by business and household sector

² Demands deposits held by businesses and household sector

³ Sum of currency and demand deposits held by business and household sector

⁴ M1 plus business and household sector time and savings deposits in the commercial banking system

^P Preliminary data

6 Statistical Tables

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Table 5 : Settlement media used by banks (at year-end, billion baht)

	2000	2001	2002	2003	2004	2005
Balances held at central bank	52	46	48	46	46	57
Required reserves	292	308	315	331	347	375
Free reserves	889	1,065	1,117	1,123	822	648
Transferable deposits at other banks	33	36	37	4	4	6
Memorandum item:						
Institutions borrowing from central bank	26	17	19	20	63	113

Source : Bank of Thailand

Table 6 : Indicators of the use of various cashless payment instruments. Volume of transactions (in thousands)

	2000	2001	2002	2003	2004	2005 ^P
Paper-based :	72,059	74,497	79,116	84,566	86,926	87,365
Cheque	72,059	74,497	79,116	84,566	86,926	87,365
Payment cards :	383,599	456,602	557,949	654,930	1,036,930	1,217,188
ATM card ¹	383,599	456,602	557,949	654,930	506,791	535,298
Debit card ²	nav.	nav.	nav.	nav.	210,934	262,484
Credit card ³	nav.	nav.	nav.	nav.	319,205	419,406
Automated :	93,802	106,921	113,870	122,201	146,404	164,493
Direct credit ⁴	54,998	62,702	65,506	72,115	87,977	98,778
Direct debit ⁵	34,053	37,713	40,192	39,669	45,356	48,483
SMART	4,107	5,758	7,369	9,453	11,862	15,728
BAHTNET ⁶	644	748	803	964	1,209	1,504

Source : Bank of Thailand

¹⁻⁵ Some banks revised the data in 2004

¹ Since 2004, Debit card data was taken out from ATM card

³ Data collected since 2004 and included non-bank

⁴ Intra-bank pre-authorized direct credit

⁵ Intra-bank pre-authorized direct debit

⁶ Since 2002, data include interbank funds transfer, third party funds transfer,

DVP/RVP for securities and Multilateral Funds Transfer.

^P Preliminary data

Table 7 : Indicators of the use of various cashless payment instruments. Value of transactions (billion baht)

	2000	2001	2002	2003	2004	2005 ^P
Paper-based :	26,949	16,785	18,817	21,949	24,968	27,737
Cheque	26,949	16,785	18,817	21,949	24,968	27,737
Payment cards :	1,465	2,061	2,496	3,296	4,084	4,754
ATM card ¹	1,287	1,827	2,210	2,876	2,112	2,360
Debit card ²	nav.	nav.	nav.	nav.	1,436	1,766
Credit card ³	178	234	286	420	536	628
Automated :	66,256	73,672	70,205	81,983	77,829	110,488
Direct credit ⁴	1,201	1,624	1,756	2,271	2,636	2,937
Direct debit ⁵	618	965	1,080	1,186	1,146	1,111
SMART	121	183	274	385	553	806
BAHTNET ⁶	64,317	70,900	67,095	78,140	73,494	105,634

Source : Bank of Thailand

¹⁻⁵ Some banks revised the data in 2004

¹ Since 2004, Debit card data was taken out from ATM card

³ Since 2003, data include non-bank

⁴ Intra-bank pre-authorized direct credit

⁵ Intra-bank pre-authorized direct debit

⁶ Since 2002, data include interbank funds transfer, third party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer.

^P Preliminary data

Table 8 : Notes and coins (at year-end, million baht)

	2000	2001	2002	2003	2004	2005
Notes and coins	475,120	512,471	583,093	661,785	742,269	781,698
Notes:	454,359	490,242	559,169	636,508	714,650	753,256
500000 baht	113	118	118	119	118	118
1000 baht	253,439	298,453	367,403	441,411	510,434	552,606
500 baht	126,537	115,803	108,987	105,452	105,639	99,488
100 baht	50,561	51,638	57,446	62,013	69,042	70,768
60 baht	413	417	439	447	452	458
50 baht	6,926	6,896	6,529	7,013	8,132	8,264
20 baht	12,211	13,161	14,648	16,536	17,350	18,087
10 baht	3,920	3,517	3,360	3,278	3,244	3,228
5 baht	123	123	123	123	123	123
1 baht	107	107	107	107	107	107
50 satang	9	9	9	9	9	9
Coins:	20,761	22,229	23,924	25,277	27,619	28,442

Source : Bank of Thailand

6 Statistical Tables

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Table 9 : Institutional infrastructure¹

	2000	2001	2002	2003	2004	2005
Central Bank						
Number of Institutions	1	1	1	1	1	1
Number of Branches ²	4	4	4	4	3	3
Number of Accounts ³	1,201	1,091	1,153	1,123	1,169	992
Value of Accounts (million baht) ³	519,001	492,347	315,627	208,496	335,662	117,607
Commercial banks						
Number of Institutions	13	13	13	13	12	16
Number of Branches	3,746	3,683	3,650	3,730	3,925	4,228
Number of Accounts	44,983,370	47,276,792	48,810,007	49,854,304	57,538,837	62,416,191
Value of Accounts (million baht)	4,626,006	4,789,139	4,897,713	5,114,021	5,384,984	5,684,676
Specialized Financial Institutions:						
Government Savings Bank						
Number of Institutions	1	1	1	1	1	1
Number of Branches	577	577	586	587	588	588
Number of Accounts	13,672,897	13,672,897	28,824,269	30,029,258	30,214,359	27,078,642
Value of Accounts (million baht)	312,409	312,409	522,619	554,242	580,131	583,281
Government Housing Bank						
Number of Institutions	1	1	1	1	1	1
Number of Branches	68	68	69	71	109	118
Number of Accounts	360,238	360,238	359,243	348,073	366,348	419,658
Value of Accounts (million baht)	213,843	213,843	192,969	239,371	331,299	351,019
Bank for Agriculture and Agricultural Cooperatives						
Number of Institutions	1	1	1	1	1	1
Number of Branches	504	504	515	532	595	596
Number of Accounts	10,000,000	10,000,000	10,588,203	11,014,933	12,131,460	13,376,015
Value of Accounts (million baht)	196,414	196,414	275,028	307,194	341,879	415,817
Export-Import Bank of Thailand						
Number of Institutions	1	1	1	1	1	1
Number of Branches	6	7	8	8	7	11
Number of Accounts	-	-	-	-	3,071	3,640
Value of Accounts (million baht)	-	-	-	-	3,928	8,862
Small and Medium Enterprise Development Bank of Thailand						
Number of Institutions	-	-	-	1	1	1
Number of Branches	-	-	-	64	80	80
Number of Accounts	-	-	-	nav.	nav.	9
Value of Accounts (million baht)	-	-	-	nav.	nav.	10,476

Islamic Bank of Thailand						
Number of Institutions	-	-	-	1	1	1
Number of Branches	-	-	-	6	9	27
Number of Accounts	-	-	-	9,574	25,553	86,003
Value of Accounts (million baht)	-	-	-	612	1,654	4,644
Branches of foreign banks						
Number of Institutions	21	18	18	18	18	17
Number of Branches	21	18	18	18	18	17
Number of Accounts	194,266	202,372	256,338	206,866	90,877	79,034
Value of Accounts (million baht)	257,552	289,578	275,133	312,518	361,147	558,619
Post Office						
Number of Institutions	1	1	1	1	1	1
Number of Branches	1,170	1,170	1,148	1,148	1,146	1,146
Number of Accounts	-	-	-	-	-	-
Value of Accounts (million baht)	-	-	-	-	-	-

Sources : Bank of Thailand and Thailand Post Co.,Ltd.

¹ Data collected since 2000

² Since 2004, Lampang office was merged with Chaing Mai office

³ Exclude regional offices

Table 10 : Payment instructions handled by selected interbank settlement systems. Volume of transactions (in thousands)

	2000	2001	2002	2003	2004	2005
Paper-based:	72,059	74,497	79,116	84,566	86,926	87,365
ECS	53,313	55,186	58,139	62,020	63,845	64,065
Provincial Cheques	18,746	19,311	20,595	19,858	16,476	16,473
B/C ¹	neg	neg	382	2,688	6,605	6,827
Automated:	5,278	9,704	14,161	24,527	32,142	45,228
BAHTNET ²	644	748	803	964	1,209	1,504
SMART (Media Clearing)	4,107	5,758	7,369	9,453	11,862	15,728
ATM-ORFT (On-line Retail Funds Transfer) ³	527	3,198	5,989	14,110	19,071	27,996

Sources : Bank of Thailand and Processing Center Co., Ltd.

¹ Inter-provincial cheques exchanged at the Electronic Clearing House

² Since 2002, data include interbank funds transfer, third party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer.

³ Data collected since 2000

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Table 11 : Payment instructions handled by selected interbank settlement systems. Value of transactions (billion baht)

	2000	2001	2002	2003	2004	2005
Paper-based:	26,949	16,785	18,817	21,949	24,969	27,737
ECS	25,436	15,181	16,987	19,916	22,653	25,063
Provincial Cheques	1,513	1,604	1,814	1,923	2,039	2,371
B/C ¹	neg	neg	16	111	277	303
Automated:	64,440	71,098	67,407	78,612	74,161	106,626
BAHTNET ²	64,317	70,900	67,095	78,140	73,494	105,634
SMART (Media Clearing)	121	183	274	385	553	806
ATM-ORFT (On-line Retail Funds Transfer) ³	3	15	38	87	114	187

Sources : Bank of Thailand and Processing Center Co., Ltd.

¹ Inter-provincial cheques exchanged at the Electronic Clearing House

² Since 2002, data include inter-bank funds transfer, third party funds transfer, DVP/RVP for securities and multilateral funds transfer.

³ Data collected since 2000

Table 12 : Securities transfer instructions handled by securities settlement systems. Volume of transactions (in millions)

	2000	2001	2002	2003	2004	2005
Bond registry system :						
Equity securities	-	-	-	-	-	-
Government securities	neg.	neg.	neg.	neg.	neg.	neg.
Book-entry system :						
Equity securities	1.00	1.00	1.00	1.94	2.11	2.47
Government securities	neg.	neg.	neg.	neg.	0.05	0.08

Sources : Bank of Thailand and Thailand Securities Depository Co., Ltd.

**Table 13 : Securities transfer instructions handled by securities settlement systems.
 Value of transactions (billion baht)**

	2000	2001	2002	2003	2004	2005
Bond registry system:						
Equity securities	-	-	-	-	-	-
Government securities	988	612	69	9	8	8
Book-entry system:						
Equity securities	161	177	237	428	722	623
Government securities	345	1,016	2,091	3,053	4,558	6,167

Sources : Bank of Thailand and Thailand Securities Depository Co., Ltd.

Table 14 : Number of participants in selected payment and settlement systems

	2000	2001	2002	2003	2004	2005
BAHTNET	77	69	65	72	69	68
ECS	38	36	36	37	37	38
Provincial Cheque Clearing	17	17	17	17	17	18
B/C ¹	-	-	-	35	35	37
SMART	27	28	27	28	27	26
Bond registry system:						
Equity securities	-	-	-	-	-	-
Government securities	16,540	27,220	157,358	142,586	200,000	235,380
Book-entry system:						
Equity securities	58	56	57	57	50	73
Government securities	974	1,053	1,202	1,307	3,200	5,124

Sources : Bank of Thailand and Thailand Securities Depository Co., Ltd.

¹ Inter-provincial cheques exchanged at the Electronic Clearing House

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Table 15 : Number of ATMs

	2000	2001	2002	2003	2004	2005
Total	5,901	6,385	7,885	9,118	10,602	15,784
Bangkok	-	-	-	-	4,314	6,373
Central	-	-	-	-	3,381	5,059
Northeast	-	-	-	-	954	1,375
North	-	-	-	-	941	1,367
South	-	-	-	-	1,012	1,610

Source : Bank of Thailand

Table 16 : Number of EFTPOS terminals

	2000	2001	2002 ^P	2003 ^P	2004 ^P	2005 ^P
Total	nav.	nav.	61,000	76,000	84,000	102,000

Source : Bank of Thailand

^P Preliminary data

Table 17 : Number of payment cards

	2000	2001	2002	2003	2004	2005 ^P
Total	22,447,422	26,350,803	32,435,521	36,401,196	42,457,150	49,754,883
Credit card ¹	1,765,640	2,567,961	5,633,363	6,734,901	8,648,100	9,958,571
ATM card ²	20,681,782	23,782,842	26,802,158	29,666,295	25,384,027	28,752,512
Debit Card	nav.	nav.	nav.	nav.	8,425,023	11,043,800

Source : Bank of Thailand

¹ Since 2002, data include non-bank

² Some banks revised the data in 2004

^P Preliminary data

Table 18 : Use of postal payment instruments.
Number of transactions (in millions)

	2000	2001	2002	2003	2004	2005
Postal payments total	19.73	19.89	20.27	28.11	29.15	30.63
Domestic money order total ¹	17.26	17.50	18.06	26.26	27.97	29.66
Domestic postal order	2.40	2.33	2.16	1.80	1.12	0.93
Postcheque	0.01	0.00	0.00	- ²	- ²	- ²
International money order	0.06	0.06	0.06	0.05	0.06	0.04
Incoming	0.06	0.06	0.05	0.05	0.06	0.04
Outgoing	0.00	0.00	0.00	0.00	0.00	0.00

Source : Thailand Post Co., Ltd.

¹ Include domestic money order and Pay at Post

² Postcheque has been terminated since 2002

**Table 19 : Use of postal payment instruments.
Value of transactions (billion baht)**

	2000	2001	2002	2003	2004	2005
Postal payments total	41.51	41.76	42.35	72.37	65.82	81.17
Domestic money order total ¹	39.92	40.18	40.77	70.77	64.37	80.19
Domestic postal order	0.64	0.65	0.63	0.58	0.29	0.21
Postcheque	0.04	0.03	0.01	- ²	- ²	- ²
International money order	0.91	0.90	0.94	1.02	1.16	0.77
<i>Incoming</i>	<i>0.89</i>	<i>0.88</i>	<i>0.90</i>	<i>0.98</i>	<i>1.10</i>	<i>0.76</i>
<i>Outgoing</i>	<i>0.02</i>	<i>0.02</i>	<i>0.04</i>	<i>0.05</i>	<i>0.06</i>	<i>0.01</i>

Source : Thailand Post Co., Ltd.

¹ Include domestic money order and Pay at Post

² Postcheque has been terminated since 2002

**Table 20 : Sources of payment revenues of
Thai commercial banks (million baht)**

	2000	2001	2002	2003	2004	2005
Total	14,761	17,744	19,589	22,280	26,994	31,431
Credit card	4,220	5,448	6,489	6,606	7,246	8,007
ATM card and e-banking	3,394	4,327	5,209	6,376	7,593	9,107
Money transfer and collection	4,348	4,605	4,877	6,018	8,420	10,520
Securities custodian	250	563	313	348	414	548
Cheque-related fee	904	1,232	1,106	1,260	1,239	1,100
Letter of credit	1,645	1,569	1,595	1,672	2,082	2,149

Source : Bank of Thailand

**Table 21 : Sources of payment revenues of
foreign bank branches (million baht)**

	2000	2001	2002	2003	2004	2005
Total	2,849	2,783	2,852	2,651	2,767	2,936
Credit card	1,041	931	1,076	557	633	717
ATM card and e-banking	63	79	110	185	92	60
Money transfer and collection	764	830	806	794	810	788
Securities custodian	644	491	593	745	865	808
Cheque-related fee	36	44	38	53	61	206
Letter of credit	301	408	229	317	306	357

Source : Bank of Thailand

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**Table 22 : Daily averages of BOT payment services.
Volume of transactions (transactions)**

	2000	2001	2002	2003	2004	2005
BAHTNET ¹	2,608	3,042	3,277	3,904	4,957	6,138
ECS	214,971	224,335	237,302	251,093	260,592	261,492
Provincial Cheque Clearing	77,866	78,500	83,993	80,396	67,212	67,236
B/C ²	nav.	nav.	nav.	10,882	26,959	27,865
SMART	16,549	23,517	30,051	38,272	48,415	64,198

Source : Bank of Thailand

¹ Since 2002, data include interbank funds transfer, third party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer.

² Inter-provincial cheques exchanged at the Electronic Clearing House

**Table 23 : Daily averages of BOT payment services.
Value of transactions (billion baht)**

	2000	2001	2002	2003	2004	2005
BAHTNET ¹	260	288	274	316	302	431
ECS	103	62	69	81	92	102
Provincial Cheque Clearing	6.5	6.5	7.4	7.8	8.3	9.7
B/C ²	nav.	nav.	nav.	0.5	1.1	1.2
SMART	0.5	0.8	1.1	1.6	2.3	3.3

Source : Bank of Thailand

¹ Since 2002, data include interbank funds transfer, third party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer.

² Inter-provincial cheques exchanged at the Electronic Clearing House

**Table 24 : Peak day figures of BOT payment services.
Volume of transactions (transactions)**

	2000	2001	2002	2003	2004	2005
BAHTNET ¹	4,468	4,908	5,109	6,115	7,372	10,165
ECS	541,738	525,726	629,130	546,858	539,013	597,938
Provincial Cheque Clearing	192,268	196,266	229,252	227,501	124,743	144,682
B/C ²	nav.	nav.	nav.	120,104	127,845	128,748
SMART	65,428	118,440	155,623	193,870	226,030	234,684

Source : Bank of Thailand

¹ Since 2002, data include interbank funds transfer, third party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer.

² Inter-provincial cheques exchanged at the Electronic Clearing House

Table 25 : Peak day figures of BOT payment services.
 Value of transactions (billion baht)

	2000	2001	2002	2003	2004	2005
BAHTNET ¹	518	501	967.2	525.8	509.0	723.1
ECS	450	118	160.3	160.0	178.0	209.3
Provincial Cheque Clearing	10.5	12.2	14.8	14.6	14.2	16.4
B/C ²	nav.	nav.	nav.	3.7	4.1	4.6
SMART	2.7	4.9	8.0	9.5	10.1	16.6

Source : Bank of Thailand

¹ Since 2002, data include interbank funds transfer, third party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer.

² Inter-provincial cheques exchanged at the Electronic Clearing House

Table 26 : Use of mobile banking¹

	2000	2001	2002	2003	2004	2005 ^P
No. of agreements	nav.	nav.	nav.	nav.	18,331	212,805
Volume of transactions	nav.	nav.	nav.	nav.	22,704	206,812
Value of transactions (million baht)	nav.	nav.	nav.	nav.	745	334

Source : Bank of Thailand

¹ Data collected since 2004

^P Preliminary data

Table 27 : Use of internet banking¹

	2000	2001	2002	2003	2004	2005 ^P
No. of agreements	21,102	97,101	254,989	348,965	1,504,385	1,780,431
Volume of transactions ²	3,300,000	6,243,407	9,990,969	10,336,929	4,872,407	11,099,729
Value of transactions (billion baht)	0.3	8.6	730.5	638.0	1,139.2	2,722.4

Source : Bank of Thailand

¹ Data collected since 2000

² Since 2004, enquiry transactions were excluded

^P Preliminary data

Table 28 : Card fraud

	2000	2001	2002 ^P	2003 ^P	2004 ^P	2005 ^P
Losses ¹ (million baht)	nav.	nav.	32	47	87	nav.

Source : Bank of Thailand

¹ Only credit card and debit card fraud are included

^P Preliminary data

7

NOTES TO STATISTICAL TABLES

9 2

<i>Symbols used</i>	<i>Definition</i>
"-"	- No data
"nav."	- Data not collected or not available
"neg."	- Data has very low value as compared to other data in the same table
"0"	- Data equals to or near zero

- Table 1:**
- GDP at current prices
 - Foreign exchange rates are annual averages.

- Table 6-7:**
- Data on credit transfers refers to intra-bank pre-authorized direct credit transactions.
 - Data on direct debit transfers is based on intra-bank pre-authorized direct debit transactions.
 - From 2002, data of BAHTNET consists of interbank funds transfer, third-party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer
 - From 2003, data on credit card transaction value includes data from non-financial institutions in accordance with the BOT's Notification No.FPG, (21)C.207/2545.
 - From 2004, debit card transaction volume and value has been separated from ATM card transaction volume and value

- Table 9:**
- Data excludes the number and value of accounts at the Bank of Thailand branches.

Table 10-11 • Data on ATM-ORFT available from 2000

- Data on inter-provincial cheques includes only inter-provincial cheques exchanged at the Electronic Clearing House in Bangkok
- From 2002, data of BAHTNET consists of interbank funds transfer, third-party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer

Table 12-13 • Equity Securities Settlement is processed through the scripless Book-entry System only

Table 17 • Since Q4, 2002, data on the number of credit cards includes data from non-financial institutions in accordance with the BOT's Notification No.FPG. (21)C.207/2545.

Table 18-19 • Data on domestic money orders includes payment services of Pay at Post.

Table 22-25 • Data on inter-provincial cheques includes cheques exchanged at the Electronic Clearing House in Bangkok only.

- From 2002, data of BAHTNET consists of interbank funds transfer, third-party funds transfer, DVP/RVP for securities and Multilateral Funds Transfer

Table 27 • Since 2004, data on volume of internet banking transactions, excluding enquiry transaction.

Table 28 • Data are based on credit card company surveys.

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