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Digital payments after capital controls: Support measures and tax revenues

Athens, July 2018

Study scope and contents



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Monitor the impact of the measures included in Law No. 4446/2016 on:

Study scope

- EMP use
- Tax revenues

Explore options for boosting further the use of EMP



1. Introduction

The imposition of capital controls, other policy measures and macro developments all affected the use of digital payments





Gradual relaxation of restrictions on cash withdrawal started 3 weeks after their imposition



Step-wise relaxation of restrictions on cash withdrawal and card use abroad

		July 2016					
 18/7/2015 End of bank holiday Cash withdrawal ceiling: €420 per week Card use aborad (ceiling per bank) 		 Cash withdrawal ceiling: €840 per fortnight No cash withdrawal ceiling for new deposits in cash after 22/7/2016 Cash withdrawal up to 30% of the value of bank transfers from abroad 		December 2017 •Cash withdrawal up to 100% of the value of bank transfers from abroad		May 2018 •Cash withdraw al ceiling: €5,000 per month	
	 August 2015 Cash withdrawal up to 10% of the value of bank transfers from abroad (starting in Sep 2015) Cash withdrawal for medical expenses up to €2000 		 September 2017 Cash withdrawal ceiling: €1,800 per month Cash withdrawal up to 50% of the value of bank transfers from abroad 		March 2018 •Cash withdrawal ceiling: €2,300 per month		

... yet their initial imposition triggered a lasting dynamic process of payment habit formation, compounded by network effects

Law 4446/2016 introduced measures to maintain the growth momentum of digital payments (1/2)



Measures on the supply side (enterprises and self-employed)

Merchants (shops, self-employed) are obliged to accept digital modes of payment from customers

- Gradual implementation across all professions is foreseen over a 3 year period, i.e. by end-2019
- First phase: A list of 85 sectors/professions had to comply by end-July 2017 (e.g. some retail trade stores, catering services, vehicle rental, pharmacies, doctors, lawyers, architects, etc.)
- Second phase: A list of 58 sectors/professions had to comply by mid-March 2018 (e.g. construction/maintenance services, other retail stores, transportation, real estate, sport activities, dry cleaners and other services)
- Requirement applies to "four-party payment-card schemes" (e.g. Visa, Mastercard, Maestro, Union Pay)
- Merchants must inform customers about their digital payment options through written signs, otherwise sanctions apply

Other measures

- Providers of payment services need to disseminate information on their tariff policy to the authorities
- Set up a data base with accounting data,
- Set up an electronic registry of bank accounts and payment accounts to enhance cross-checking (link with taxes)
- The ceiling for cash transactions was reduced to €500 (from €1500)
- All types of labour remuneration in cash are no longer tax deductible for the employer unless made through EMP

Law 4446/2016 introduced measures to maintain the growth momentum of digital payments (2/2)



Measures on the demand side (consumers)

Income tax surcharge in case of low EMP use

- Tax payers must execute shares of their expenditure through EMP to benefit from income tax deduction
- The minimum use of EMP is defined progressively as a share of taxable income:
 - Income €1-10,000 : 10%
 - Income €10,000-30,000: 15%
 - Income €30,000 or above: 20% and up to €30,000
- If the minimum EMP use is not covered, then income tax increases
- Implementation as of financial year 2017

Medical expenditures eligible for tax deduction only if paid through EMP (temporary measure)

Public Lottery Program

• Annual budget: €12 million



Taxable income

Tax deduction and tax surcharge in case of low EMP use

The macroeconomic environment affects consumption and hence the use of EMP





Chain linked volumes, index 2010=100 Seasonally and calendar adjusted data







Greece EU-28 Euro area 30 25 20 15 10 5 0 2014M03 2011M09 2012M07 2012M02 2012M12 2013M05 2013M10 201*5*M06 2016M09 2017M12 2009M03 2009M08 2010M01 2010M06 2010M11 2011M04 2014M08 2015M01 2015M11 2016M04 2017M02 2017M07

Consumer Confidence Indicator



Unemployment Rate (in %) Seasonally adjusted data



2. Digital payments– descriptive analysis

Types of Electronic Modes of Payment (EMP) examined in the study





* The sample covers all transactions through cards which were issued by one of the four Greek systemic banks. The four banks represented circa 97% of total Greek banking sector assets in 2016. Data refers to the period January 2014- December 2017.

** Monthly data on the total number of active users of e-banking and mobile banking stems from the four systemic banks during the period 2014-2017. In addition, annual data on credit transfers, direct debits, cheques and e-money purchase transactions, is publicly available by ECB during 2000-2016.

The number of card transactions has increased by six times after the imposition of capital controls







Notice: Prepaid cards are not included Sources: Member banks of Hellenic Bank Association, Data Analysis: IOBE

The number & value of card payments kept growing in 2016 and 2017

The percentage growth rates of card use slowed down in the second year of capital controls





Notice: Prepaid cards are not included Sources: Member banks of Hellenic Bank Association, Data Analysis: IOBE

...yet growth rates continued to be large

In absolute terms, the 2017 y/y increase was larger than the one in 2016



Annual change in payment card use, compared to annual change in 1st year of capital controls

140



Number of transactions

2016 H2 Index 100== average y/y change during the 1st year of capital 2017 H1 2017 H2 120 115 98 100 85 80 controls 60 40 20 0 June July 2017 February 2017 Septemper 2016 October 2016 Hoverher 2016 December 2016 January 2017 September 2017 October 2011 Hovenber 2011 August 2016 March 2017 APril 2017 MOT 2017 AUGUST 2017 December 2017 1417 2016

Value of transactions

Notice: Prepaid cards are not included Sources: Member banks of Hellenic Bank Association, Data Analysis: IOBE

...which trend was pronounced in 2017 H2

The expansion stems mainly from debit cards ...



Number of transactions by type of card (12-month rolling Index 2014==100)



Value of transactions by type of card (12-month rolling Index 2014==100)



Sources: Member banks of Hellenic Bank Association, Data Analysis: IOBE

E-banking users have been increasing...





Number of active e-banking users

Sources: Member banks of Hellenic Bank Association, Data Analysis: IOBE





...albeit at a slower pace than during the 1st year of capital controls

Mobile banking use rises sharply, and has accelerated during 2017





Sources: Member banks of Hellenic Bank Association, Data Analysis: IOBE





The number of direct debit orders and credit transfers has increased by half since 2014, cheques are used less

Other EMP transactions per capita in Greece, Index 2014==100







Source: ECB Data Analysis: IOBE

The value of direct debits increased, contrary to credit transfers and cheques whose turnover has dropped since 2014

Cards' penetration in Greece remains significantly below EU average...



Number of card transactions per capita (2016)

Value of card transactions, in % of private consumption (2016)



Source: ECB (Data for 2016 and Greece 2015); Member banks of Hellenic Bank Association (Data for Greece 2017), Data Analysis: IOBE * Extrapolation by IOBE for 2017





Value of card transactions, y-o-y changes in ppts of GDP

Value of card transactions, y-o-y changes in ppts of private consumption

Source: ECB (Data for 2016 and Greece 2015); Member banks of Hellenic Bank Association (Data for Greece 2017), Eurostat, Data Analysis: IOBE * Extrapolation by IOBE for 2017

...when Greece showed the largest increase as a share of GDP since 2001



3. Sectoral breakdown of card use

Sectoral classification on the basis of 3 criteria





Transactions classification based on assumed risk of tax evasion

• Transactions in large retail stores or chains (super markets, fuel stations), pharmacies, postal offices, SOEs, hospitals, betting services, insurance, travel services, etc.

Medium risk

• Transactions where the seller may not issue a receipt and keeps the VAT, which is paid in full by the consumer

• Transactions where the consumer may not pay fully the VAT, following an agreement with the seller on a lower transaction price

Sample: Total payment card transactions from two systemic banks that represent 50% of the total annual value and number of card transactions

The share of card transactions in sectors affected by the 1st implementation phase of law 4446/2016, increased in 2017



Sectors in the 1st phase of law implementation: Change in share of total card transactions during 2017, in ppts



Source: Member banks of Hellenic Bank Association, Data Analysis: IOBE

*Sectors fall under the first phase of law 4446 implementation if they have been subject to mandatory installment of POS since the end of July 2017. Notice: Analysis of the sector data refer to a sample from two systemic banks

...by 1.2 ppts in value and by 2.8 ppts in number of transactions...

...with "low risk" sectors winning market share, but also some "high risk" sectors







Number of transactions

Source: Member banks of Hellenic Bank Association, Data Analysis: IOBE

Value of transactions

* "Professionals" include doctors, lawyers, engineers, tax consultants, accountants, nurses & psychologists.

Notice: Sector data analysis refer to the sample of two systemic banks

Retail trade sectors maintain more than 85% of the total value and number of payment card transactions



Transactions share per sector, 2017 (in % of total card transactions)



Transactions number

Source: Member banks of Hellenic Bank Association, Data Analysis: IOBE

Transactions value

*Retail trade except supermarkets & fuel stations.

** "Professionals" include doctors, lawyers, engineers, tax consultants, accountants, nurses & psychologists.

Notice: Sector data analysis refer to the sample of two systemic banks

...although retail trade represents less than 50% of total private consumption

...while in other sectors, card transactions are less frequent than what their share in private consumption would suggest







Source: Member banks of Hellenic Bank Association, Eurostat Data Analysis: IOBE

Notice: "Professionals" include doctors, lawyers, engineers, tax consultants, accountants, nurses & psychologists.

"High-risk" sectors include construction/maintenance services and transactions with professionals (e.g. doctors, lawyers, engineers, accountants, nurses, psychologists).

Sector data analysis refer to the sample of two systemic banks

Despite of the convergence observed since 2014, including a noteworthy performance by doctors, the use of plastic money is still particularly low for catering services and professionals



4. Geographical breakdown of card use

Geographical classification in 4 categories: Attica basin, Thessaloniki, islands, rest of continental Greece





Sample: Total payment card transactions from one systemic bank that represents 24% and 23% of the total annual value and number of card transactions respectively.

The increase in card payments was significantly higher outside the two largest Greek cities



Card use per geographical region (12-month rolling average 2014==100)



Value of transactions

Number of transactions

Source: Member banks of Hellenic Bank Association **Data Analysis:** IOBE **Notice:** The geographical analysis data refer to sample from one systemic bank

...both in terms of value and number of transactions

December 2017

June 2017 August 2017 October 2017

But the adjusted level of card penetration, remains significantly greater in the Attica basin



Source: Member banks of Hellenic Bank Association **Data Analysis:** IOBE **Notice:** The geographical analysis data refer to sample from one systemic bank

...with the rest of continental and insular country trailing behind, despite the convergence observed since 2014



5. Demographics of card users

The demographics analysis is based on a sample of 15,520 cardholders









Average value of transaction by gender

Source: HBA members Data processing: IOBE

Women: More rapid increase in number of transactions since 2015, but sharper drop of average transaction value

Largest increase in monthly card spending among those aged 35-64





Source: HBA members Data processing: IOBE

Small drop for the youngest age group (below 25 years)

Highest card transaction frequency among banking and security forces personnel





Average number of transactions

Average transaction value by occupation



Source: HBA members Data processing: IOBE



6. Impact of measures on electronic payments





What was the measures' impact on digital payments, controlling for the effects of macroeconomic factors and capital controls?

Variables and data



Choice of three dependent variables as proxies for EMP use

- Value of card transactions, growth rate, per sector and region
- Number of card transactions, growth rate, per sector and region
- Number of active e-banking users, growth rate

Independent variables and controls:

- Dummy for bank holiday (July 2015), for the 1st year of capital controls (July 2015 June 2016), whole period under capital controls (July 2015 December 2017)
- Dummy for Law 4446/2016 being voted (Jan-Dec 2017) and for launch of 1st phase implementation for compulsory POS terminal installation (Jul-Dec 2017)
- Macroeconomic controls: Inflation, private consumption, GDP, population
- Lagged dependent variables (ARIMA model specification)
- Monthly data from HBA-member banks
 - Card payments and e-banking users during January 2014 December 2017

Approach 1 – Impact of law dummy in-sample

• The model is estimated over the whole period 2014-2017 and the law's impact is isolated through the use of a dummy variable for its period of validity

Approach 2 – Out-of-sample forecasts under the null hypothesis of no measures (law 4446)

- The model is estimated up until before the law's voting (December 2016)
- The model forecasts EMP use in 2017 under the null hypothesis of no measures
- Forecasts for 2017 are compared with actual EMP use after the voting of the law
- The discrepancy between forecasts and actual values can be attributed to the law's impact





Approach 1 - Results

- Positive impact mainly in 2017 H2 (1st implementation phase of POS measure)
- Larger impact on debit cards
- The impact of capital controls was larger than that of legislation, while both factors are statistically significant

Law 4446 had a positive impact on cards use compared to the alternative no-measures scenario (Approach 2)



Value of total card transactions

Value of transactions, debit cards



Number of total card transactions



Number of transactions, debit cards



Model forecast with no measures: Red line Actual values: Blue line (12-month rolling index 2014==100) Confidence interval 30%, 60% και 90% with **bold**, average, light green shade respectively

Impact of measures on card transactions turnover across indicative sectors and regions



IV



Card transactions outside Athens urban area

Card transactions in sectors that were affected by the 1st implementation phase of law 4446



Model forecast with no measures: Red line Actual values: Blue line (12-month rolling index 2014==100) Confidence interval 30%, 60% και 90% with **bold**, average, light green shade respectively



	Total card payments		
	Value of transactions	Number of transactions	
Yield of measures (annualised new card use in December 2017 compared to scenario without measures)	€2.97 bln.	110 mln.	

The law contributed to an increase of card transactions' penetration up until December 2017 by €3 billion and 110 million (on an annual basis), in terms of value and number respectively.



7. Impact on VAT revenues

Strong positive correlation between card use and indirect tax revenues in Greece





Source: Member banks of Hellenic Bank Association, Independent Authority for Public Revenues (AADE) Data analysis: IOBE



What was the impact of EMP use on VAT revenues, after controlling for changes in tax policy and other macroeconomic factors?

Variables and Data



Dependent variable: Indirect taxation revenues

- VAT revenues (growth rate)
- VAT revenues excl. oil (growth rate)

Independent variables and controls

- Value of card transactions (growth rate, share of private consumption)
- Number of card transactions (growth rate)
- Tax base: Nominal GDP
- Tax rate: Index derived from HICP data (Eurostat)
- Dispersion of tax rate: dummy for VAT reform in June 2016 (fewer exceptions)
- Bank holiday (dummy for July 2015)

Data

- Monthly VAT revenues data before refunds (Independent Authority for Public Revenues -AADE)
- Monthly data on digital payments from member banks of Hellenic Bank Association

Descriptive analysis

2015





2017

2016

2015

2016

2017

Variables (12-month rolling window)

High correlation between tax rate and use of digital payments – problem of multicollinearity => Use of appropriate econometric techniques (orthogonalization)

Estimated degree of card penetration not attributed to macroeconomic factors (step 1)



Estimated penetration of card payments (Monthly changes of 12-month rolling window)





All cards, value of transactions



Debit cards, value of transactions



The above trends are attributed both to consumer preferences and to changes in tax compliance

Positive and statistically significant impact of card use on tax compliance



		VAT revenues					
		I	II	Ш	IV	V	VI
All cards	Value of transactions	0.14***					
	Number of transactions		0.11***				
Debit cards	Value of transactions			0.08**			
Credit cards	Value of transactions				0.44***		
Card value as sh	are of GDP					2.04***	
Card value as share of private consumption							1.41***
Instrumental variables		Tax base (GDP)	, Tax rate , Disper	sion rate			
Adjusted R ²		17.4%	15.6%	3.7%	14.7%	22.6%	22.2%
Observations		36	36	36	36	36	36

Notice: The statistical significance of the rates noted with ***, ** and * for levels of statistical significance 1%, 5% and 10% respectively. The value of transactions and GDP are expressed in current prices.

During 2015-2017 on average, every 1% increase of card use in value or number of transactions, led to an increase of VAT revenues by **0.14 ppts** and **0.11 ppts** respectively 1% increase in annual VAT income is caused by 7.1% or 9.3% increase in the value and number of card transactions respectively



1% increase in annual VAT revenues is caused by:

7.1% annual
increase in the
value of card
transactions

13.0% annual increase in the value of debit card transactions 9.3% annual increase in the number of card transactions

0.7 percentage point increase in the card value share in private consumption 0.5 percentage point increase in the card value share in GDP The law contributed to about 1/3 of total annual VAT revenues' increase in 2017



In 2017, total VAT revenues increased by 5.2% (€780 million)

Quantification of the impact of Law 4446 on VAT revenues through increased card penetration => increased tax compliance

	Estimated impact of law on card transactions (y-o-y change)	VAT revenues attributed to the legislation (in million €)
All cards, value	+9.9%	210
All cards, transactions	+19.9%	323

Notice: Based on estimation through 2-stage least squares

The total impact of card use penetration on VAT revenues was significantly higher, contributing to at least 50% of total annual VAT revenues' increase in 2017 Annual VAT revenues would increase by 21% (€3.3 billion) if Greece attains EU average use



Potential VAT revenues based on good practices of other countries as per the ratio «transaction value over private consumption»

Card transaction value as a share of private consumption	Greece gap from other countries, in ppts	Potential VAT revenues (in € million)	Potential VAT increase vs 2017 (in %)
EU28 average	14.9 ppts	3,308	21.0%
Eurozone	6.2 ppts	1,368	8.7%
Portugal	38.4 ppts	8,541	54.1%

Notice: Based on estimation through 2-stage least squares

Annual VAT revenues would be higher by 54% (€8.5 billion) if Greece reaches the level of card use in Portugal in terms of value of card transactions over private consumption Higher revenues by €3.9 billion if the share of catering services in card use reached that of consumption



Potential tax revenues from the convergence of card penetration across sectors

Sector of transaction	Share of sector in card use/ Share of sector in private consumption	Potential additional VAT revenues (in € million)	Potential VAT increase vs 2017 (in %)
Restaurants & Bars	0.36	3,908	24.8%
Professionals	0.45	1,978	12.5%

Notice: Based on estimation through 2-stage least squares "Professionals" include doctors, lawyers, engineers, tax consultants, accountants, nurses & psychologists

Annual VAT revenues would be higher by 12% (€2.0 billion) if the share of card transactions with professionals reached their share in private consumption

Higher income by €1.3 billion if the share of continental regions outside the 2 big cities in card use was equal to their GDP share



Potential tax revenues from the convergence of card penetration across geographical regions

Geographical region	Regional share of card use/ Regional share of GDP	Potential additional VAT revenues (in € million)	Potential VAT increase vs 2017 (in %)
Continental Greece excl. Athens and Thessaloniki	0.66	1,270	8.0%
Islands	0.77	930	5.9%

Notice: Based on estimation through 2-stage least squares

Annual VAT income would be higher by 5.9% (€930 million) if the use of cards on the islands reached their GDP share



8. Policy measures

Indicative policy measures to strengthen incentives for further EMP use, on 3 pillars



Demand side - Consumers

- Return 5% of card transaction value in targeted sectors or geographical regions
- Income tax discount awarded in cases of large EMP use in risky sectors
- Incentives for formal complaints against firms that don't accept EMPs (including cases where a POS is installed, but it repeatedly faces "technical problems")

Supply side - Businesses

- Lottery or tax deduction for self-employed who meet EMP penetration targets
- Tax deductibility of professionals' expenses to be conditional upon their electronic payment
- Implementation of digital billing

Government

- Supervision that ensures expedient and effective implementation of law 4446
- Compulsory declaration of all professional accounts held by businesses and selfemployed, by specific deadlines and imposition of penalties for non-compliance

Additional policy measures to boost incentives for card use and other EMPs (1)



Demand side - Consumers

- Incentives to issue formal complaints against businesses which have not declared their professional account
- Enhancement and targeting of incentives in medium & high risk sectors
 - Lottery approach with fewer winners, greater rewards and advertisement, larger weight to high risk transactions

Supply side - Firms

- Enforcement of the mandatory installment of POS for all self-employed
- Safeguards of competition among banks and card-issuing firms, so that card and other EMP use fees remain low
- Enhancement of reward/return programs through collection of points, coupons, etc. since they are effective in augmenting EMP use (IOBE, 2015)
- Subsidy on POS operational costs for small businesses that show significant EMP increase, and/or exceed minimum threshold of EMP use
- Mandatory acceptance of EMP in B2B transactions

Additional policy measures to boost incentives for card use and other EMPs (2)



Administrative measures – Government role

- Effective use of information regarding EMP use to allow for targeted tax audits, while safeguarding privacy protection principles
- Implementation of mandatory acceptance of EMP in public services and SOEs (eg. public transportation), expansion of e-stamp (paravolo) payment facility and possibility to pay it through cards (eg. at KEP Centers of Citizen Services) or through QR code (mobile app).
- Supervision that ensures all wages, pensions and transfer payments are paid through the banking system, enforcement for contractors and project contracts
- □ Lower ceiling for cash payments to zero for legal persons, and €300 for individuals, enforcement of stricter monetary fines
- Minimize exemptions from accepting EMP (monitoring to ensure that "EMP rejection for technical reasons" is temporary, foreclosure moratorium in cases of on-going settlement scheme or out-of-court workout process)
- Sanctioning of professionals in cases of non-acceptance of EMP



9. Cost-benefit analysis on indicative package of supplementary measures

Incentives - Consumers

■ Return 5% on the value of card transactions in medium & high risk. A cap of €500 return per household per year shall apply.

Incentives - Businesses

- □ Lottery (€12 million / year) for active businesses in:
 - Medium and High risk sectors
 - Geographical regions (excl. Athens and Thessaloniki) where penetration is low





Assumptions	Conservative scenario	Baseline scenario	Optimistic scenario
VAT gap in "risky" transactions	28%	40%	50%

The VAT gap in "risky" transactions (percentage of transactions not documented in case they had alternatively been executed in cash) is equalized to the average VAT gap for the whole Greek economy in the conservative scenario (28%, EC 2015) Net benefit for the 5% return measure, if targeted sectors' card share reaches 85% of their private consumption share



Break – Even Analysis

What should the yield of the measure be, in terms of annual increase of card transaction value or share of total consumption, so that its benefit is equal or higher than its cost?





* Forecasts are based on the application of the measure in transactions with professionals (doctors, lawyers, engineersí, accountants, nurses, psychologists) and in catering and construction services.

Net benefit for lottery measure, if targeted sectors' card share reaches 39.1% of their consumption share



Annual € 12 million lottery measure for targeted businesses* "Break even" analysis



* Forecasts are based on the application of the measure in transactions with professionals (doctors, lawyers, engineersí, accountants, nurses, psychologists) and in catering and construction services.



10. Conclusions

Conclusions (1)



The imposition of capital controls and law 4446/2016 both provided significant boost to EMP use in Greece

- The number of card transactions increased six-fold while the value of card transactions increased over three times during 2014-2017
- Higher increase in debit card transactions
- Highest percentage growth rate of card use in the first year after capital controls
- Highest increase of card use as a share of GDP in 2017 (Effect of law 4446)
- Significant penetration of e-banking, mobile banking, direct debit orders, after capital controls

The impact of law 4446/2016 on EMP use was positive, with heterogeneous intensity across sectors

- Positive and statistically significant impact on card use, not statistically significant on other EMPs (eg. e-banking)
- Card payment market share in sectors under the 1st phase of law implementation (POS installation) increased, including "high risk" sectors
- The law contributed to an increase of card transactions' penetration up until December 2017, by €3 billion and 110 million, in terms of value and number of transactions, respectively

The level of cards use converged to EU28 average at the fastest pace in 2017, however it remains relatively low and heterogeneous across sectors and regions

- Cards use as a share of private consumption remains 14.8 ppts below EU28 average
- "Low-risk" sectors such as supermarkets, fuel stations and pharmacies increased their card market share. Retail trade sectors represent more than 85% of total cards turnover.
- Some "risky" sectors increased their card market share too. However, the level of card use in "risky" transactions remains significantly lower than their share in private consumption
- Geographical regions outside Athens and Thessaloniki, exhibited higher increase of card use since 2014, than the two large urban areas. However, the level of card use in areas outside Athens, remains significantly lower than their share of GDP

Conclusions (2)



Positive and statistically significant impact of cards use on tax revenues

- Every 1% increase of value or number of card transactions, led to an average increase of VAT revenues by 0.14 ppt and 0.11 ppt respectively during 2015-2017
- Every 1 ppt increase of card use as a share of private consumption increased VAT revenues by 1.4 ppt during 2015-2017
- Total card use penetration had a significant positive effect on tax compliance, contributing to at least 50% of total annual VAT revenues' increase in 2017

Positive effect of law 4446/2016 on VAT revenues, potential for further fiscal gain from greater use of EMP

- The law contributed to around 1/3 of total VAT revenues' increase in 2017. The annual positive fiscal impact is estimated between €210 million and €323 million
- Based on international practice in relation to the ratio of card use over private consumption, annual VAT revenues would be higher:
 - by 21% (€3.3 billion) if Greece reached the EU average level
 - by 54% (€8.5 billion) if Greece reached Portugal's level
- If EMP penetration was more homogeneous across geographical regions and sectors, annual VAT revenues would be higher by:
 - 25% (€3.9 billion) if the share of catering sector in card use reached its share of private consumption
 - 12% (€2.0 billion) if the share of professionals in card use reached their share of private consumption
 - 8% (€1.3 billion) or 5.9% (€930 million) if card use in continental Greece excl. Athens and Thessaloniki and in insular Greece, was closer to these regions' share in GDP

Policy measures

- Measures targeting EMP penetration in medium & high risk sectors and regions with low use
- Consumer incentives (eg. return of a percentage of the transaction value, etc.)
- Business incentives (eg. Lottery for self-employed, tax discount conditional on reaching EMP penetration targets, etc.)
- Administrative measures (full implementation of law 4446/2016, implementation of business account registry, reduction of cash transaction ceilings, etc.)