У випуску представлені дослідження актуальних проблем економічної теорії, страхування, управління ризиками, перестрахування, державного управління, міжнародної економіки, економіки підприємства, менеджменту, маркетингу, управління інвестиціями, теорії фінансів, банківської справи, статистики та шляхи й засоби вирішення цих проблем.

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СИГНАЛЬНИЙ ПІДХІД ДО МОДЕЛЮВАННЯ КРИЗИ ПЛАТІЖНОГО БАЛАНСУ

У роботі було розглянуто та виконано узагальнення теоретичних моделей кризи платіжного балансу, досліджено найбільш ефективні способи моделювання кризи в Україні. Для математичної формалізації кризи платіжного балансу був проведений порівняльний аналіз ефективності різних форм розрахунку індексу валютного тиску. За використання сигнального підходу визначено набір індикаторів, які сигналізують про зростання ймовірності кризи платіжного балансу. За допомогою мінімізаційної функції підібрані порогові значення для показників, при перетинанні яких надсилається сигнал про зростання ймовірності виникнення кризи платіжного балансу.

Ключові слова: криза платіжного балансу;сигнальний підхід; індекс валютного тиску; обмінний курс;міжнародні резерви.

Вступ. Україна не раз зустрічалась з проблемою подолання кризи платіжного балансу. Досвід нашої країни включає в себе кризи 1998, 2008 та 2014 року. Всі вони несли негативний вплив на банківську систему, стабільність валюти, економічне зростання, а як наслідок призвели до зниження соціальних стандартів та рівня життя населення.

Криза платіжного балансу характеризується різким знеціненням валюти, скороченням міжнародних резервів, а також підвищенням відсоткових ставок. Найбільший вплив вона несе на країни, що розвиваються, з високою залежністю від кон'юнктури окремих товарних ринків. Саме так ми можемо охарактеризувати і Україну. Руйнівні наслідки кризи платіжного балансу українці могли відчути не так давно, рік тому наша держава знаходилась на межі фактичного дефолту.

Актуальним залишається питання моделювання кризових процесів та можливості їх передбачення. Лише в другій половині XX століття, коли після поглиблення торгівельних зв'язків наслідки кризи стали вражати країни, що розвиваються, у наукових колах сформувався значний інтерес до даної проблематики. Підходи до пояснення механізмів просування кризи платіжного балансу були широко висвітлені в працях Г. Камінської, К. Рейнхарт [1,2,3] та П. Кругмана [4, 5]. Згодом почали з'являтися системи раннього попередження криз, які дозволили оцінити вірогідність виникнення кризи впродовж найближчого періоду. Для України питання створення адекватної моделі попередження кризи платіжного балансу залишається відкритим та найбільш актуальним, так як кризові процеси з 2014-го року значно поглибились.

Метою роботи є створення економіко-математичної моделі, що ґрунтується на сигнальному підході, для прогнозування кризи платіжного балансу. Для досягнення мети було визначено фактори, що є каталізатором до появи кризи платіжного балансу в Україні, проаналізовано тенденції поширення криз, визначено найбільш ефективну форму індексу валютного тиску в Україні, розв'язано оптимізаційну задачу для визначення порогових значень для кожного з індикаторів, що сигналізують наближення кризи платіжного балансу.

Об'єктом дослідження виступає сукупність економічних процесів, щопризводять до виникнення кризи платіжного балансу. *Предметом* дослідження є сигнальний підхідпопередження кризи платіжного балансу. На основі сигнального підходу було визначено набір індикаторів, що сигналізують про нестабільність у майбутньому та побудовано зведені індекси наближення кризи.

Теоретичний огляд. В процесі становлення теорії криз виокремлюють три покоління моделей криз платіжного балансу.

Моделі "першого покоління" з'явилися як результат обґрунтування латиноамериканських криз у 70-80-х роках минулого століття. Дослідниками були П. Кругман [4], Р. Флуд та П. Гарбер [6].

В праці "Модель кризи платіжного балансу" П. Кругман описує поняття кризи платіжного балансу як результат накопичення дисбалансів у зовнішньому секторі, який не може компенсуватися ні внутрішніми резервами, ні зовнішніми запозиченнями. Суб'єкти ринкових відносин відчувають слабкість уряду й неможливість втримати фіксований курс, тому й починають збільшувати тиск на національну валюту (M_t/P_t), ґрунтуючись на власних раціональних очікуваннях і максимізуючи власний рівень добробуту $(W_t = M_t/P_t + F_t)$. Зазвичай така ситуація супроводжується зростанням попиту на іноземну валюту (F_t) та відпливом іноземних інвестицій.

П. Кругман порівняв розвиток кризи за двох режимів валютного курсу: фіксованого та плаваючого. В графічній моделі (див. рис. 1) висхідна крива *LL* відображає умову портфельного балансу, ріст активів у іноземній валюті буде супроводжуватись ростом активів у національній валюті для відповідного рівня девальвації валюти. Спадаюча крива *WW* відображає рівень багатства. Для отримання іноземної валюти в будь-який момент, резиденти повинні знизити рівень їх реальних запасів в національній валюті.
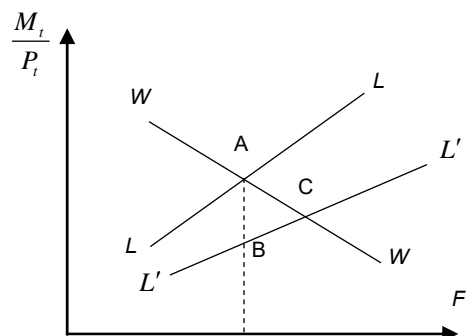

Рис. 1. Ефект впливу девальвації валюти за фіксованого та плаваючого курсу

Джерело: побудовано на основі [4]

Якщо у випадку гнучкого курсоутворення національна валюта знецінюється, тоді крива LL зміститься до $L'L'$. У випадку якщо F не можна змінити, девальвація зростає, переміщуючи рівновагу від точки А до В.

Якщо уряд має резерв іноземних грошей R і готовий обміняти іноземну валюту нанаціональну за фіксованого курсу, тоді резиденти можуть торгувати вільно, рухаючись по кривій WW. Девальвація призведе до зміщення в портфелі вітчизняних резидентів зі зміною платіжного балансу від А до С.

Існує компенсуюча зміна резервної позиції уряду, оскільки уряд поставляє бажані іноземні гроші; зміни в запасах активів представлені формулою: $\Delta R = -\Delta F = \Delta M/P$. Таким чином, за гнучкими тарифами, зміни в очікуваннях відображені в короткостроковій перспективі в змінах валютного курсу; тоді як за фіксованими ставками вони відображаються у змінах резервів уряду.

На основі праці П. Кругмана для України можна виявити такий механізм утворення кризи платіжного балансу: на першому етапі поступове зниження резервів, на другому етапі спекулятивну атаку і посткризовий період, протягом якого валюта поступово знецінюється.

Моделі "першого покоління" були також розглянуті у праці Р. Флуда та П. Гарбера[6]. Вони вважають, що одним з основних факторів утворення нестабільності виступає незбалансована внутрішня економічна політика.

Отже, основним досягненням моделей першого покоління є ідентифікація недоліків запобігання кризи при фіксованому курсі. А основним недоліком є спрощена модель очікування девальвації інвесторами та відсутність аналізу поширення валютної кризи по країнам-партнерам – "ефект інфікування".

Моделі "другого покоління" виникли після кризи європейської грошової системи в 1992-1993 роках та мексиканської в 1993 році.Основоположником моделі кризи платіжного балансу "другого покоління" є М. Обстфельд [7], він вказував на те, що криза визначається діловими очікуваннями суб'єктів господарської діяльності, чиї негативні очікування спонукають до відходу від стану рівноваги з фіксованим обмінним курсом. В свою чергу уряд продовжує утримувати стабільний обмінний курс для стабілізації ситуації, тому виникає висока ймовірність спекулятивної атаки. Економіка реагує підвищенням відсоткових ставок для нівелювання спекулятивної атаки. У випадку, коли економіка перебуває на циклі падіння, тоді зростання попиту на іноземну валюту призводить до дисбалансу, що призведе до розгортання кризових процесів.

Провал моделі "другого покоління", що не змогла пояснити кризу в Азії, а також процесу утворення "подвійних криз" вплинуло на перегляд фундаментальних припущень механізму утворення кризи платіжного балансу. Були розглянуті моделі "третього покоління", що базувалися на припущенні щодо поєднання валютних, кредитних ризиків та ризиків ліквідності, реалізація яких веде до банківських та валютних криз.

Моделі "третього покоління" з'явились у результаті азійської та російської криз в 1997-1998 роках [9]. Вони ґрунтуються на ширшому діапазоні праць, середяких оновлена праця П. Кругмана [5] та Дж. Корсеті [10], П. Пезенті[11] та Н. Рубіні [12]. Дослідникирозглянули проблему регулюваннябанківської сфери на потрясіння фінансової системи та її взаємозв'язок з кризою платіжного балансу.

П. Кругман виділив три фактори, які призводять до виникнення кризи платіжного балансу:

1. Труднощі в управлінні зовнішнім боргом та утриманні його в певних межах для країн, що розвиваються.

2. Відсутня можливість запозичень з-за кордону в національній валюті.

3. Суттєвий розрив між активами та зобов'язаннями країни [5].

Н. Корсетті [10] стверджує, що існує лінійний зв'язок між нормами прибутковості на фондовому ринку двох країн:

$$r_i = \beta_0 + \beta_1 r_j + v_i$$

де r_i, r_j – норми прибутковості на фондових ринках двох країн; v_i – стохастичний шум, що не залежить він норми прибутковості; β_0, β_1 – деякі константи, при чому β_1 вказує на "силу" взаємовпливу двох ринків.

Ефект "інфікування" у його праці формується на основі істотної кореляції між фондовими ринками різних країн. Були створенні критерії перевірки взаємовпливу та оцінки "незалежності" двоступінчастим методом.

Ф. Канова [13] вважає, що інфікування відбувається через три канали: фінансова взаємозалежність між країнами, взаємозалежність реальних секторів та через зміни в очікуваннях учасників ринку.

Методологія досліджень.На початку 90-х років минулого століття Б. Айхенгрін, А. Роуз і К. Віплош [14] ввели таке поняття як "індекс валютного тиску" (далі – ІВТ). Різка зміна обмінного курсу, відсоткової ставки та обсягів міжнародних резервів є основними сигналами наближення кризи платіжного балансу.Математична формалізація ІВТ на думку дослідників має вигляд:

$$EMP_t = \frac{1}{\sigma_e}\frac{\Delta\varepsilon_t}{\varepsilon_t} + \frac{1}{\sigma_{rm}}\frac{\Delta rm_t}{rm_t} - \frac{1}{\sigma_r}\Delta r_t, \qquad (1)$$

де EMP_t – індекс валютного тиску; rm_t – обсяг міжнародних резервів центрального банку; σ_{rm} – стандартне відхилення зміни резервів; ε_t – обмінний курс; σ_e – стандартне відхилення зміни обмінного курсу; r_t – ринкова відсоткова ставка; σ_r – стандартне відхилення зміни ринкової відсоткової ставки.

У 1998 році Г. Камінська та К. Рейнхарт [3] розробили підхід до визначення індексу валютного тиску за формулою:

$$EMP_t = \frac{\Delta\varepsilon_t}{\varepsilon_t} - \frac{\sigma_e}{\sigma_{rm}}\frac{\Delta rm_t}{rm_t} \qquad (2)$$

ЗгодомГ. Камінська, С. Лізондо та К. Рейнхарт[2] створили деяку модифікацію ІВТ, що враховує номінальну ставку і має вигляд:

$$EMP_t = \frac{\Delta\varepsilon_t}{\varepsilon_t} - \frac{\sigma_e}{\sigma_{rm}}\frac{\Delta rm_t}{rm_t} + \frac{\sigma_e}{\sigma_i}\Delta i_t, \qquad (3)$$

де i_t – номінальна процентна ставка в країні; σ_i – стандартне відхилення зміни номінальної процентної ставки.

Відсоткова ставка включається до індексу залежно від того, чи є вона ефективним каналом трансмісійного механізму в країні, для якої розраховується [14].В даному випадку ІВТ зростає зі знеціненням національної валюти, зменшенням міжнародних резервів і ростом номінальних процентних ставок.

Модифікований індекс тиску на валютний ринок створили Дж. Сакс, А. Торнелл та А. Веласко [16]. Він має наступний вигляд:

$$EMP_t = \left(\frac{1/\sigma_e}{m}\right)\frac{\Delta\varepsilon_t}{\varepsilon_t} - \left(\frac{1/\sigma_{rm}}{m}\right)\frac{\Delta rm_t}{rm_t} + \left(\frac{1/\sigma_i}{m}\right)\Delta i_t, \qquad (4)$$
$$m = 1/\sigma_e + 1/\sigma_{rm} + 1/\sigma_i$$

Більшість дослідників вважають кризовими моментами епізоди, коли значення ІВТ менше за середнє значення на два стандартні відхилення. Слід зазначити,

що поріг вибирається для кожної країни індивідуально. Чим ближче країна наблизилась до переходу в групу "розвинені країни", тим менш волатильними є її показники. Для таких країн порогове значення може знижуватися й до рівня $1,5\sigma$ та буде оптимально сигналізувати про настання кризи.

Одним з актуальних підходів до моделювання індексу валютноготиску є також "метод Z", описаний у дослідженні М. Фратзшера [17]. На його думку, зміна міжнародних резервів та відсотковоїставки можуть взаємокомпенсувати одна одну. Тому найбільш доцільним є розкладення моделі Б. Айхенгріна на компоненти, та дослідження їх волатильності, а саме порогових значень. Індекс набуває значення "1" у випадках:

$$\Delta r_{i,t} / r_{i,t} < \beta_2 \sigma_{r,t} + \mu_{r,t}$$
$$\Delta e_{i,t} / e_{i,t} < \beta_1 \sigma_{e,t} + \mu_{e,t}$$
$$\Delta i_{i,t} < \beta_3 \sigma_{i,t} + \mu_{i,t}$$

де $\beta_1, \beta_2, \beta_3$ – порогові значення для індикаторів.

Індекс валютного тиску як неперервна змінна може використовуватися для економетричного аналізу, але при сигнальному підході виникає потреба у змінній, яка заздалегідь інформує про те, що відбудеться криза платіжного балансу.Для цього вводиться змінна попередження кризи. Вона, набуваючи значення "1", сигналізує про те, що криза відбудеться впродовж наступних t місяців. Також сигнали не приймаються впродовж шести місяців після того, як кризова змінна, отримана на основі індексу валютного тиску, набула значення "1".

Було розглянуто як найефективніше підібрати форму індексу, який би описував кризу платіжного балансу для української економіки.Не виникає сумніву щодо використання обсягу міжнародних резервів як одного з компонент ІВТ. Що стосується відсоткової ставки, то найдоцільніше включати середню ставку за операціями на міжбанківському ринку, на відміну від облікової ставки. Вона є менш політизованою та швидко реагує на зміну ситуації на ринку [8].

Для побудови форми індексу валютного тиску, що найкраще описуватиме кризові явища,було розглянуто такі компоненти: міжнародні резерви, середня ставка за операціями на міжбанківському ринку, в якості обмінного курсу три альтернативи: РЕОК, НЕОК та середньозважений курс гривні до долара.В якості форм індексу були обрані моделі (1)-(4).

Всього було розглянуто 12 альтернатив представлення індексу валютного тиску. Для вибору найбільш ефективної форми ІВТ був запропонований власний критерій, що спирається на модифікацію індексу Камінської [2]:

$$L_t = \sum_{i=1}^{n} \left(0,25 \cdot SM_{III,t}^i + 0,5 \cdot SM_{II,t}^i + SM_{I,t}^i + 2SE_t^i \right) \quad (5)$$

де SE_i^t – кількість коректно виправданих "жорстких сигналів", коли після опускання ІВТ на рівень 2σ відбувались кризові процеси, SM_i^t – "м'яких сигналів", коли після опускання на рівень σ за більше як 6 місяців розпочинались кризові процеси.

Для "жорстких" $w_{SE} = 2$, для "м'яких", що подали сигнал за 6 місяців $w_{SM}^I = 1$; за 12-6 місяців $w_{SM}^{II} = 0,5$; за 24-12 місяців $w_{SM}^{III} = 0,25$. Розглядався період з 2002 по 2014 рік.

Така форма модифікації пов'язана з невизначеністю прогностичних властивостей ІВТ, адже він побудований на відносно невеликі вибірці."Хибними" сигналами вважаються ситуації, коли після перетину ІВТ "жорсткої межі" не слідувала криза платіжного балансу.

Найбільш ефективною виявилась модифікована форма ІВТ (3), де компонентами виступаютьреальний ефективний обмінний курс (РЕОК), міжнародні резерви та середня відсоткова ставка на міжбанківських операціях (див. табл. 1).Саме така форма ІВТ пропонується в якості індикатора настання кризи платіжного балансу у сигнальному підході.

Індекс чітко відображає кризовий період 2007-2008 років, а також посилення тиску й впродовж 2012-го року, коли кризовий стан був близьким (дефіцит платіжного балансу зріс на 70%), але за рахунок адміністративних заходів Національного банку України кризи вдалося уникнути (див. рис. 2). Така ж ситуація була наприкінці 2014, коли дефіцит платіжного балансу сягнув 4,6 млрд доларів США.

В 2015 році дефіцит поточного рахунку (5,22 млрд доларів США) був зумовлений зниженням експорту товарів за рік на 14,4% – до 55,6 млрд доларів у результаті призупинення виробничих потужностей і руйнування транспортної інфраструктури на сході країни, а також зниженням цін на світових товарних ринках. Як бачимо, в цей період індекс валютного тиску опустився до своєї історично найнижчої критичної межі, що зумовило наближення економіки країни до стану технічного дефолту.

Сигнальний підхід до передбачення кризи платіжного балансу. Одним з найбільш ефективних методів знаходження індикаторів наближення кризи платіжного балансу є метод побудови непараметричних оцінок. При цьому підході розробляються різні числові характеристики, що дозволяють завчасно виявляти уразливість економіки перед кризою. В рамках зазначеного підходу можна виділити два основних напрямки: побудова граничних значень індикаторів – передвісників кризи платіжного балансу на основі різних критеріїв, а також розробку зведених індексів фінансової стабільності.

Таблиця 1. Порівняння форм індексу валютного тиску

Форма ІВТ	Компоненти *	Значення L_t	Кількість хибних сигналів
Айхенгріна, Роуза, Віплоша	REER, IR, RM	5,50	1
	NEER, IR, RM	5,50	2
	Average ER, IR, RM	3,00	1
Камінська, Рейнхарт	REER, RM	6,25	4
	NEER, RM	7,75	4
	Average ER, RM	3,00	4
Камінська, Лізондо, Рейнхарт	REER, IR, RM	8,50	4
	NEER, IR, RM	7,75	5
	Average ER, IR, RM	9,50	7
Модифікований	REER, IR, RM	8,50	5
	NEER, IR, RM	7,75	5
	Average ER, IR, RM	7,50	4

* REER – реальний ефективний обмінний курс, IR – відсоткова ставка, RM – міжнародні резерви; NEER – номінальний ефективний обмінний курс; Average ER – середній міжбанківський обмінний курс.

Джерело: розрахунки авторів на основі [18], [19]
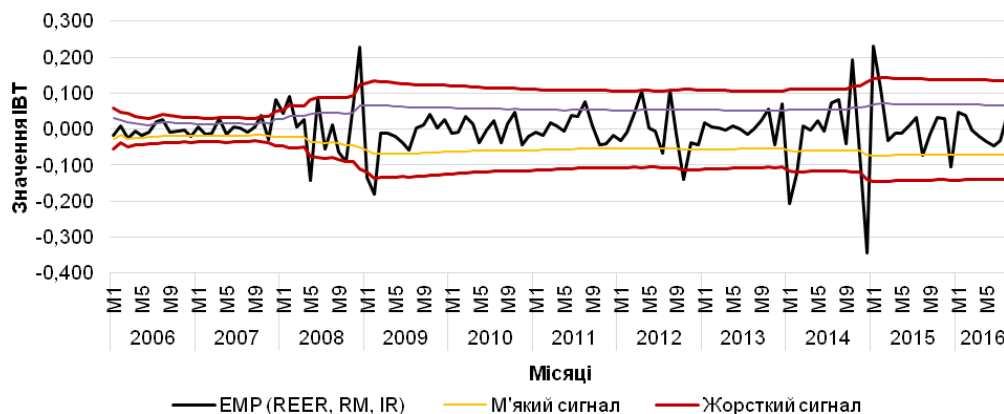
Рис. 2. Сигналізування кризи платіжного балансу на основі IBT

Джерело: розраховано авторами на основі [18], [19]

Першою роботою, в якій для прогнозування фінансової нестабільності були використані непараметричні оцінки, стало дослідження Г. Камінської, С. Лізондо і К. Рейнхарта [2], в якому проводиться емпіричний аналіз валютних криз 90-х років і пропонується ідея сигнального підходу. Він полягає в тому, що є певний набір індикаторів. При перетинанні критичного значення індикатор сигналізує про те, що через певний період часу відбудеться криза.

Завданням кожної системи раннього попередження є якомога раніше надсилання сигналу про зростаючу ймовірність того, що криза платіжного балансу відбудеться. У праці в якості сигнального горизонту, протягом якого динаміка показників може передбачати кризу, буде розглядатися період в 12 місяців.

Кожен індикатор може подати сигнал (перший рядок табл. 2)або не надати сигнал (другий рядок табл. 2). Якщо індикатор подає сигнал, за яким слідує криза протягом встановленого тимчасового горизонту (12 міся-

ців), то сигнал називають "вірним" (комірка A). Коли індикатор подає сигнал, а криза не наступає протягом 12 місяців, сигнал відносять до шуму або до "хибних" сигналів (коміркаB). Якщо індикатор не подає сигнал, а криза трапляється, то сигнал вважається "пропущеним" (комірка C). Якщо ж індикаторподає сигнал, і криза не відбувається, то сигнал також відносять до "вірних" – комірка (D).

Кількість сигналів C також називають помилкою першого роду, а B – другого роду. З таблиці 2 для кожного індикатора можна отримати інформацію про частку вірних сигналів, яка вимірюється як відношення кількості сигналів A до суми сигналів A й C. Також частка коректних прогнозів щодо відсутності кризи вимірюється як відношення D до суми B й D. Дані підходи дають можливість отримати максимальну інформацію про кожний з індикаторів й прийняти рішення, наскільки можна чи не можна йому довіряти.

Таблиця 2. **Розподіл значень індикаторів в при подачі сигналів про кризу**

Подія	Настання кризи протягом наступних 12 місяців	Не настання кризи протягом наступних 12 місяців
Є сигнал	A	B
Нема сигналу	C	D

Джерело: розподіл запропоновано у праці [2]

Слід зазначити, що існує кілька підходів щодо вибору порогових значень індикаторів для сприйняття сигналу про настання кризи платіжного балансу.

Розглянемо перший підхід. Для цього визначимо безумовну ймовірність настання фінансової нестабільності для кожного індикатора як відношення спостережень, за якими протягом 12 місяців слідувала нестабільність, до всіх спостережень:

$$P(C) = \frac{A+C}{A+B+C+D}$$

Якщо індикатор посилає велику кількість "хороших" сигналів, то можнаочікувати, що ймовірність настання фінансової нестабільностіза умови подання сигналу $P(C\,|\,S)$(умовна ймовірність) буде більша, ніж$P(C)$. При цьому

$$P(C) < P(C\,|\,S) = \frac{A}{A+B} \qquad (6)$$

Дана умова є необхідною для вибору оптимальногопорогового значення. Крім того, при виборі порогових

значень треба мінімізувати відношення "поганих" сигналів до "хороших" :

$$N/S = \frac{B/(B+D)}{A/(A+C)} \qquad (7)$$

Таким чином, ми розглядали всі можливі пороговізначення для кожного індикатора за максимально можливий відрізок часу і вибирали то граничне значення, при якому значенняпоказника (7) було мінімальним, а умова (6) виконувалась.

На практиці дуже часто дослідники зіштовхуються з тим, що сигнал, що має високе значення A, також має й значну кількість похибок. Тому необхідно балансувати між помилками I та II роду. Для вирішення цієї задачі застосовуєтьсядругий підхід, що полягає у мінімізаціїкритерію втрат регулятора [6]:

$$L(\theta) = \theta \cdot \frac{C}{A+C} + (1-\theta) \cdot \frac{B}{B+D}, \qquad (8)$$

де $\theta \in [0;1]$.

Для аналізу ситуації в Україні ми маємо тільки три чітко виражені кризові епізоди в 1998, 2008 та 2014 ро-

ках та передкризові епізоди. Тому досить важливо не пропустити періоди, що сигналізують про кризу, а отже, помилки I роду для нашого дослідження є значно гіршими за помилки II роду. Популярними є підходи вибору θ на рівні 0,3, 0,5 та 0,7 – але для України слід таки використати останнє значення рівню відповідно.

Сигнали, отримані кожним з показників, повинні бути агреговані таким чином, щоб дати можливість кількісно показати зростаючу чи спадаючу тенденцію ймовірності виникнення кризи платіжного балансу. Для цього розраховується зведений індекс попередження, який є сумою сигналів, надісланих кожним з індикаторів при перетинанні порогового значення. Для обчислення зведеного індексу попередження може використовуватися сигнальний або агрегований підхід.

Сигнальний підхід базується на тому, що зведений індекс попередження є зваженою сумою всіх сигналів.

Ваги розраховуються як S/N – обернене до статистики (7) й нормовані таким чином, щоб їх сума дорівнювала "1" :

$$L_t = \sum_{i=1}^{k} b_{i,t} w_i \qquad (9)$$

де L_t – зведений індекс попередження (сигнальний); w_i – ваги кожного з показників; $b_{i,t}$ – бінарні значення кожного з індикаторів.

Інший підхід, який полягає в обчисленні агрегованого індексу попередження, передбачає суму не бінарних змінних кожного індикатора, а їх абсолютних значень. Це пояснюється тим, що відхилення певного індикатора на 1,5 чи на 3,0 стандартні відхилення при сумі бінарних змінних матимуть однакову вагу. У той же час глибоке падіння одного з індикаторів може доволі чітко вказувати на загрозу зростаючої кризи.

При використанні методів оцінки для неперервної змінної цей підхід є ефективнішим. Врахування таких різких падінь може штучно завищувати небезпеку кризи й не враховувати структурні та політичні зміни, що відбуваються в країні, але які призводять до різких змін того чи іншого індикатора. Індекс попередження на основі агрегованого підходу обчислюється згідно з підходом:

$$L_t = \sum_{i=1}^{k} l_{i,t} I_{i,t} \qquad (10)$$

де L_t – зведений індекс попередження (агрегований); $l_{i,t}$ – фактичне значення кожного індикатора; $I_{i,t}$ – нормувальний індекс (максимальне історичне значення на заданому періоді дорівнює "1", а мінімальне – "0", $I_{i,t} \sim N(0;1)$.

Для виявлення оптимального набору індикаторів, які б сигналізували про кризу платіжного балансу щодо

включення в систему раннього попередження, була сформована широка вибірка показників, які були проаналізовані в рамках даного дослідження.

В даній роботі було розглянуто місячні часові ряди з 2004 року до 2016 року таких показників:
1. Темпи економічного розвитку:
* зростання реального ВВП;
* зростання промислового виробництва.
2. Платіжний баланс:
* індекс цін на метали CRU;
* реальний ефективний обмінний курс (РЕОК);
* номінальний ефективний обмінний курс (НЕОК);
* міжбанківський та середньозважений курс гривні до долара;
* сальдо поточного рахунку платіжного балансу;
* сальдо фінансового рахунку;
* прямі іноземні інвестиції;
* торгівельний баланс до ВВП;
* зовнішній борг;
* міжнародні резерви;
* імпорт та експорт;
* чистий відтік капіталу;
3. Відсоткові ставки:
* відсоткова ставка (за операціями на міжбанківському ринку);
* різниця між відсотковою ставкою та ставкою LIBOR;
* відношення ставки по кредитах до ставки по депозитах;
* індекс ПФТС.
4. Грошові індикатори:
* індекс споживчих цін (ІСЦ);
* відношення резервів до ВВП;
* відношення М2, М3 і грошової бази до ВВП;
* кредити, кредити у приватний сектор та депозити до ВВП.

На основі вищенаведених підходів: мінімізації N/S та $L(\theta)$ було обрано десять найкращих індикаторів.

У всіх значення N/S менше 1 (див. табл. 3). Показники впорядковані в міру своєї прогностичної здатності, під якою ми будемо розуміти перевищення умовної ймовірності передбачення настання фінансової нестабільності над безумовною ймовірністю. Іншими словами, чим "кращий" індикатор, тим більша ймовірність виникнення фінансової нестабільності за умови подачі сигналу і, отже, тим більше перевищення даної ймовірності над безумовною вірогідністю настання фінансової нестабільності.

В даній таблиці також наведені результати оцінки сигнальних меж (кількість стандартних відхилень, що сигналізуватимуть про наближення кризи платіжного балансу).

Таблиця 3. Визначення найбільш ефективних індикаторів

Індикатор	Порогове значення	N/S	$P(C\|S)-P(C)$	$L(\theta)$	Межа (σ)
Знецінення РЕОК (за місяць), %	4,66	0,00	0,52	0,62	1,00
Міжнародні резерви (зміна до попереднього місяця) %	-5,75	0,07	0,45	0,55	0,60
Знецінення середнього міжбанківського курсу гривні до долара (за місяць), %	8,11	0,12	0,41	0,61	1,00
Дефіцит платіжного балансу, млн дол. США	-2 774,36	0,20	0,34	0,40	0,60
Процентна ставка на міжбанківських операціях, %	14,51	0,40	0,22	0,54	1,00
Знецінення НЕОК (за місяць), %	1,99	0,53	0,16	0,59	0,60
Торгівельний баланс до ВВП, %	-0,10	0,54	0,15	0,56	0,60
Скорочення експорту (до відповідного місяця попереднього року), %	-3,76	0,68	0,10	0,56	0,41
Зростання ВВП (до відповідного кварталу попереднього року), %	-5,33	0,72	0,08	0,57	0,60
Приріст індексу ПФТС, %	2,36	0,90	0,03	0,42	0,20

Джерело: розрахунки авторів на основі [18], [19], [20]

Співставивши результати за двома підходами, можна побачити, що не обов'язково індикатор, що має низьке співвідношення N/S несе малі втрати регулятора. До прикладу такий фактор як знецінення РЕОК має найбільше прогностичну здатність, проте значення $L(0,7) = 0,62$ вказує на найвищі втрати.

Слід зазначити, що індикатори, які характеризуються своєю високою прогнозною здатністю, представляють основні групи змін наведені вище. Так дефіцит платіжного балансу, торгівельний баланс до ВВП, знецінення РЕОКу відображаютьторгельну позицію України по відношенню до зовнішнього світу. Їїпогіршення є одним з передвісників розгортання кризи платіжного балансу.

Інша група індикаторів, до якої входять скорочення міжнародних резервів та експорту, свідчить про стійкість країни та можливістьвистояти під тиском зовнішніх шоків. Різке зниження за квартал індексу ПФТС свідчитиме про"перегрів" економіки.

На основі порогових значень індикаторів був виведений індекс, що ілюстрував ймовірність настання кризи в конкретний місяць. Він був отриманий в результаті використання сигнального підходу на основі формули (9), наведений на рисунку 3. Бачимо, що значення індексу, що ґрунтується на сигнальному підході, почало різко зростати з кінця 2007-го року та в грудні досягло

першого максимуму – 30%. Найбільш ймовірним періодом до настання кризи став кінець 2008-го року, тоді значення індексу стрибнули до 70%. Стрибки можна прослідкувати в нестабільні періоди з 2012-2015 рр. Слід зауважити, що на даний момент значення індексу стабілізувались на рівні 15%, що вказує на сталий обмінний курс протягом останніх місяців, зменшення темпів інфляції та вдалу політику НБУ.

Подібний результат був отриманий на основі агрегованого індексу кризи (10). Як вже зазначалось, при використанні методів оцінки для неперервної змінної цей підхід є ефективнішим. Адже врахування таких різких падінь може завищувати небезпеку кризи й не враховувати структурні та політичні зміни. Результат додавання значень сумування рядів нормованих індикаторів, а не їх сигналів, наведений на рис. 4.

З рисунка 4 видно, що значення агрегованого індексу почали зростати також наприкінці 2007-го року, проте в червні 2008-го слідував спад. В той же час значення агрегованого індексу досягли майже передкризового стану у 2012 році, що об'єктивно відображало існуючу загрозу кризи платіжного балансу. А в 2014 році досягли критичного значення, що було близьким до стану пікового кризового становища в 2008 році.
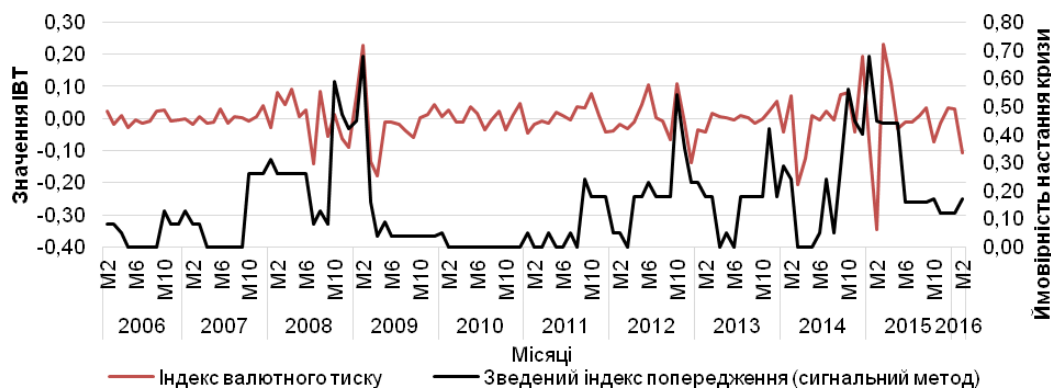
Рис. 3. Динаміка зведеного індексу попередження за сигнальним методом

Джерело: розраховано авторами на основі [18], [19]

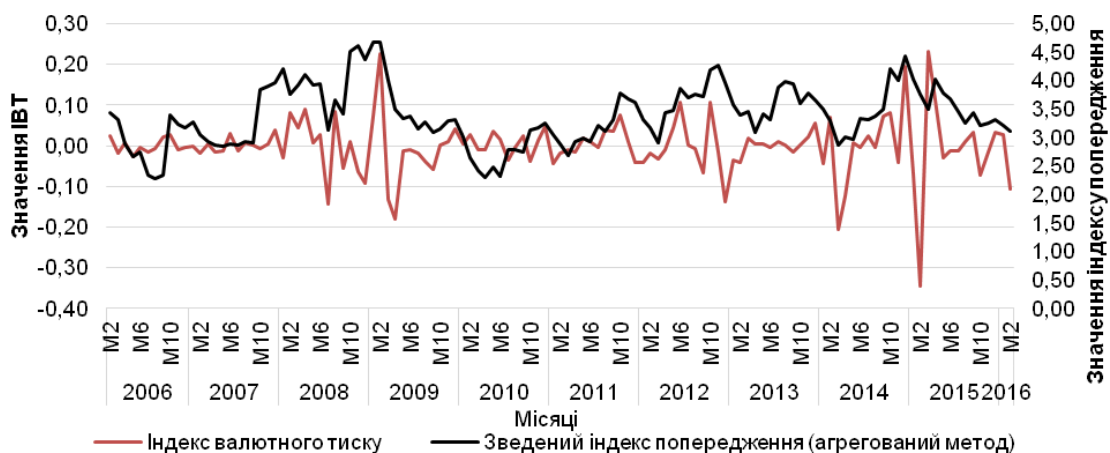**Рис. 4. Динаміка зведеного індексу попередження за агрегованим методом**

Джерело: розраховано авторами на основі [18], [19]

Висновки. У роботі було розглянуто та виконано узагальнення теоретичних моделей кризи платіжного

балансу кращих дослідників світу, досліджено найбільш ефективні способи моделювання кризи в Україні та за-

пропонованийсигнальний метод, що можна вважати пріоритетним серед підходів до передбачення нестабільності в Україні.

Перевагою даного методу є гнучкість, можливість врахувати останні структурні та політичні зміни для коригування критичних порогових значень. Він дає можливість формалізації стану платіжного балансу обчисленням зведеного індексу попередження кризи з рівномірним врахуванням кожного з індикаторів, що є ефективним методом в прогнозуванні. А недоліком є наявність долі "хибних сигналів" та неможливість врахування "інфікування" зі сторони країн-партнерів.

В майбутньому стоїть питання, яким чином можна було б поєднати взаємозалежність України від макроекономічної ситуації її країн-партнерів та можливість формалізації такого зв'язку за допомоги індикаторів.

На даний момент ситуація в Україні стабілізувалась, що підтверджує і динаміка індексу валютного тиску й зведених індексів попередження. Валютний ризик значно скоротився в порівнянні з груднем 2015-го року, показники чистих міжнародних резервів вказують на постійну позитивну динаміку з квітня 2016-го року. Загалом міжнародні резерви виросли за рік на 16% завдяки зовнішньому інвестуванню. Це надало можливість Україні перейти з класу СССдо В- за рейтингом Fitch.

Проте, у разі припинення співпраці з МВФ можуть виникнути суттєві ризики початку дестабілізаційних процесів. Накопичення державного боргу збільшило б навантаження на державний бюджет.Нестійкість фінансового ринку та криза ліквідності у комерційних банках підвищує ймовірність настання кризи.

Тому політика НБУ повинна включати такі заходи щодо мінімізації загрози: підтримка обсягів міжнародних резервів, стабілізація національної валюти та банківської системи.

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СИГНАЛЬНЫЙ ПОДХОД К МОДЕЛИРОВАНИЮ КРИЗИСА ПЛАТЕЖНОГО БАЛАНСА

В работе было рассмотрено и выполнено обобщение теоретических моделей кризиса платежного баланса, исследовано наиболее эффективные способы моделирования кризиса в Украине. Для математической формализации кризиса платёжного баланса был проведен сравнительный анализ эффективности различных форм расчета индекса валютного давления. При использовании сигнального подхода был определен набор индикаторов, которые сигнализируют о росте вероятности кризиса платёжного баланса. С помощью функции минимизации были подобраны пороговые значения для показателей, при пересечении которых посылается сигнал о росте вероятности возникновения кризиса платёжного баланса.

Ключевые слова: кризис платежного баланса; сигнальный подход; индекс валютного давления; обменный курс; международные резервы.

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THE SIGNAL APPROACH TO MODELLING THE BALANCE OF PAYMENT CRISIS

The paper considers and presents synthesis of theoretical models of balance of payment crisis and investigates the most effective ways to model the crisis in Ukraine. For mathematical formalization of balance of payment crisis, comparative analysis of the effectiveness of different calculation methods of Exchange Market Pressure Index was performed. A set of indicators that signal the growing likelihood of balance of payments crisis was defined using signal approach. With the help of minimization function thresholds indicators were selected, the crossing of which signalize increase in the probability of balance of payment crisis.

Keywords: balance of payments crisis; signal approach; Exchange Market Pressure Index; exchange rate; international reserves.

References (in Latin): Translation / Transliteration/ Transcription

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NEW HORIZONS IN CULTURAL ECONOMICS:
SOUTHEASTERN ANATOLIA REGION IN UPPER MESOPOTAMIA AS A CASE STUDY

When rich cultural structure, geo-politic, geo-strategic structures of the region are considered will have an important role in the cultural economy of the region. For this reason, it is important to assemble the cultural economy effectively and to use it for the development of the region which has important historical ruins such as Zeugma and Hasankeyf.

Keywords: Cultural Economics; Heritage; Southeastern Anatolia Region, Completed-Ongoing and Planned Projects.

Problem statement. Anatolia that has always been a cradle of civilization is still keeping its historical, geographical and economical importance. In recent years, with the Southeastern Anatolia Project (GAP) which is aiming social and economical development of the Southeastern Anatolia Region, culture and cultural heritage has become popular.

In the first stage of this study, the historical background is presented briefly. Furthermore, the social, economical and cultural aspects of the region today are introduced.

In the second stage, studies for making the region benefit from existing cultural and historical heritages are summarized.

In the last stage, policies and strategies for adopting the historical and richness to economic development of the region are proposed. And, also these policies and strategies convey the ways of making the international society use of these richness.

Object of an article. The main object of this study is to constitute the infrastructure of cultural economy in the region which has rich historical and cultural treasures and to present it for the use of international level.

Main research subject treatment.

A.THE HISTORCIAL BACKGROUND. The Southeastern Anatolian Region, with its very rich history and cultural heritage, as shown in its magnificent historical sites, is well worth visiting. Its history begins around 7000 B.C. came the Hurris, who were to be followed by the Hittites sometime around 1200 B.C.

In the sacred land which encircles the Fìrat (Euphrates) and the Dicle (Tigris) rivers, the Grandfather of Religion, Ibrahim (Abraham) the Prophet lived. Ibrahim was born in Ur, now called Sanlì Urfa, and later moved south from the city of Ur to Harran, through the south. In Harran, which was an important Mesopotamian historic and cultural center, the ruins of one of the largest and Islamic universities can be seen among the archaeological remains.

When you travel from the south to the north over the Mesopotamian plains, the first high mountain to be seen is the picturesque Mount Nemrut, with the Mausoleum of the Commagene King Antiochos at its 2150-meter peak. The most important areas of the region are Diyarbakìr, whose city walls are a superb example of medieval military architecture; Mardin, with its unique architecture; and Gazi Antep, a large trade and industrial center which contains the remains of late Hittite cities.

The Atatürk Dam lake is planned to be the region's holiday and water-sports center. There are many beaches along the shore of the lake, and a holiday under the Mesopotamian sun will be a memorable experience.

Covering the provinces of Adiyaman, Batman, Diyarbakir, Gaziantep, Kilis, Mardin, Siirt, Sanliurfa and Sirnak, the GAP Region has an area extending over 75,358 square kilometres which corresponds to 9,7% of the total area of the country.

According to Census results (2015) the population of the region is 8, 250, 718 which corresponds to 9,5% of the total population of the country (78, 700, 00). Urban-rural distribution of population is, respectively, 63% and 37%.

In the period 2000-2010, the rate of population growth was 2,5% for the region whereas the country average was 1.5%.

When we look at the issue in terms of urban and rural rates of population growth, the rate of urban population growth in the region is 4,6%. This is quite high compared to the overall urban population growth rate which 2,9%. Growth rate of rural population, on the other hand, is falling down both in the region and in the country. The corresponding values are -0.5% and – 7%, respectively, for the region and the country, showing that the slowing down

in the rate of growth of rural population is faster in the country than it is in the region.

In the region, the share of urban population was 56% in 1990, later to rise to 70% in 2000. The share of rural population dropped from 44% to 30% in the same period.

This high rate of urban population growth in the GAP region put a further stress on already insufficient urban infrastructure services at the first hand. Furthermore, unless relevant measures are taken, the problems of employment will further aggravate.

The Southeastern Anatolian Project is Turkey's largest and most multifaceted development project, and also, one of the largest development projects in the world. The project includes active farming with extensive irrigation systems and electricity production, alongside of which are the tourism, mining, petrol, education, health, communication, industry and transport sectors.

The Southeastern Anatolia Project covers the lower parts of the Fìrat and Dicle rivers; and Gazi Antep, Sanli Urfa, Adiyaman, Diyarbakir, Mardin, Siirt, Batman and Sirnak, which are situated on the plains between the rivers. This project will also bring with it a change in climate in the area.

B. EXISTING HISTORICAL AND CULTURAL HERITAGES. To travel along Turkey's southern border, take the highway which connects Gaziantep, Sanlì Urfa and Mardin to Syria and Iraq.

Gaziantep, located on a wide and fertile plain cultivated with extensive olive groves and vineyards, produces a variety of agricultural crops. It is especially known throughout Turkey for its excellent pistachios. Industry also contributes to the local economy. The 36 towers of the city's fortress were originally constructed in the Justinian era and were later rebuilt by the Seljuks. The Archaeological Museum has important items from Neolithic, Hittite, and Roman times. The Hasan Süzer House, from the turn of the century, has been beautifully restored and houses the Etnographical Museum.

The ruins of Belkìs (Zeugma) are on the borders of Nizip. it has a mound which has been turnedinto a citadel. The mosaics from the Roman period are well worth seeing.

Selevkos Nikator, one of the army generals of Alexander the Great had coined the city he founded "Selevkia Euphrates" by joining his name with that of the river. He also constructed a bridge over the Euphrates to connect Zeugma to Apemia, the settlement on the other bank of the river he had built on the name of his wife.

Zeugma was in fact a bridge, a bridge to culture and arts with its spectacular mosaics made with colorful stones of the Euphrates, frescoes, statues and architecture.

Dionysus, Euphrates, Oceanus, Psyche and Poseidon had left the depths of mythology to embellish finely the floors and walls of rich Roman villas. Still hiding the footsteps of Helens, Romans and the Byzantines who settled here for the fertility of the Euphrates, Zeugma was also a bridge for trade, communication and correspondence as an important post on the Silk Road starting from Antioch and ending in China. Today, archaeologists are striving to save as much as possible from the Euphrates and transfer one of the magnificent cities of Mesopotamia to the 21st century. And in that sense Zeugma is still maintaining its status as a bridge.

To develop a strategy for the Zeugma urgent excavation and rescue work launched under the coordination of the GAP Administration, examinations and observations were conducted at the site in May 2000 with the participation of staff from the GAP Administration, Turkish and foreign scientists, experts from Gaziantep Museum, Director of Cultural Affairs in Gaziantep and representatives of Birecik A.S. The antic city was divided into three zones as A, B and C as a result of these examinations and observations.

Zone A: This area is under water since June 2000. The Ministry of Culture had conducted archeological excavations and documentation work in this area for the last 9 years. In this region which now remains under 372 meters as the altitude of the surface of the dam lake, rescue work continued until inundation.

Zone B: This zone covers the area under 385 meters as the highest level for the dam lake where urgent excavation and rescue work was materialized in October 2000.

Zone C: This is the area which is not affected by the dam lake but covers the main part of the antic city (about 70 percent of the city). The target is to carry out long term and full coverage work in this zone under the light of earlier work conducted in Zone B.

The overall objective of the urgent excavation and rescue work is to gather more information on the evolution of the city and to fulfill documentations to enable future generations to grasp the historical importance of the settlement. Since full excavation is impossible for such a large city, this work will proceed on a sampling strategy. This will also throw light upon the character, spread, nature and order of remains in Zone B.

In the 12th century B.C., Kahraman Maras was the capital of the Hittite state of Gurgum. Adìyaman's Archaeological Museum houses regional finds from the Lower Fìrat which date from the Neolithic and Chalcolithic ages.

In the great plain of High Mesopotamia, Sanlì Urfa, known in ancient times first as Ur and later as Edessa, proudly exhibits the legacy of all the civilizations that have prospered in this region. In the second millennium B.C., it was a city of a Hurrite state.

Neolithic and Chalcolithic finds from the Lower Fìrat region. Believed to be the ancient city of the same name mentioned in the Old Testament.

Harran is known more now for its unusual beehivedwellings than as the place where Abraham spent several years of his life. The archaeological remains include those of the largest ancient Islamic University, city walls dating from the 8th century, four gates and a citadel. The Gap project will transform Harran into one of the most fertile areas in Turkey.

Birecik, 80 km west of Sanlì Urfa, straddles the Fìrat river, its skyline dominated by the town's citadel. A good place to take a break, there is good accommodation and camping facilities here.

Diyarbakir, known in ancient times as Amida, spreads across a basalt plateau close to the banks of the Dicle river. The black basalt triple walls, which encircle the old town give the city a rather ominous appearance.

From a distance, the golden stones of Mardin's houses blend into the rock of the hills on which the city is built. On closer inspection, the stone carving and decoration of the houses and public buildings reveals the city as an architectural treasure chest.

At Hasankeyf are the ruins of the 12th-century capital of the Artukids. The bridge which once spanned the Dicle and connected the two parts of the city and the ruined palace inside the citadel, evokes the ghosts of a vanished dynasty.

It is not known, when and by whom Hasankeyf is established. But the city and thousands of caverns surrounding it, shown that cavern people were established here before ages. Hasankeyf is situated in Mesopotamia region here before one of the oldest selling places. The fact that Tigris River flows passing in it, its geographical structure easy to defend and its thousands of caverns used as dwelling drew always attention and maintained its strategic importance during the ages. It was named "Hisn Keyfa"

thanks to its fortress built out of a single piece of stone. But it is known that other names has been used also.

Hasankeyf leaned against the shore of "Tigris" River is watching us, yet it look tired and exhausted. It saw all the magnificent buildings, from the Antique Period to Middle Ages, has received with open arms them, sheltered them and brought until nowadays for the service of human being. Had carried the responsibility of the history and civilizations until nowadays, without being crushed or broken. Situated at the starting point of Mesopotamia Hasankeyf was the favorite of the Eastern and Western tribes and out of the Antique Period was the host of Byzantium, Sassanids Umayyad, Abbasids, Hamdanides, Mervanides Artuk people Eyyubies and Ottomans.

Hasankeyf was the scientific and cultural center of the region with it's economic importance through the change of communication roads and trade centers, but did not overlook to convey to us the historical and cultural heritage.

Hasankeyf which reached our days with hundred of Mosques, Churches palace and city remains has been lost for for centuries, through irresponsible administration and uneducated people.

C. PROJECTS COMPLETED. Identification, documentation and publication of immoveable cultural properties in these districts. Plans, sectional and frontage drawings of cultural properties in Birecik, Suruc and Halfeti and publications supported by photographs.

The project was completed and its documents were published by the GAP Administration in August 1999. This publication is available at GAP Documentation Center. A version of the same work in English is presently in progress.

As a human centered project, protection of cultural heritage in the region is among the primary objectives of the GAP. The symposium on the Conservation and Promotion of Cultural Properties in the GAP Region was organized to promote these properties at international platforms and emphasize their significance also in tourism.

The symposium took place in Şanlıurfa on June, 2 – 5 1998 with the participation of senior level staff from related organizations and agencies, people of science from the country and abroad, representatives of various NGOs and the media. There were 41 papers delivered to the symposium covering such issues as "Cultural Properties", "Cultural Values and Tourism", "Cities and Historical Sites", etc.

D. ONGOING PROJECTS. To rescue cultural properties in the settlement of Hasankeyf that will remain under Ilisu Dam Lake.

Identification of all visible cultural properties, including architectural structures and small findings existing in the site, realization of relief, transfer of those that are moveable, creation of an open air museum and conduct of archaeological work to bring to daylight those cultural properties presently underground.

Present State: Excavation and rescue work was started in 1991 upon a protocol between the Ministry of Culture and GAP Administration. But there was cessation in activities until 1998 due to the extraordinary circumstances in the area. Excavation and rescue work re-starting in 1998 focused on the area called "lower town".

The main bulk of work in the year 2001 took place from 25 June to 29 August. During this work priority was given to surface investigation, checks and cleaning in addition to other activities at the central excavation site and banks of the Tigris River. Post-excavation work is carried by an expert team.

a) Participatory Urban Rehabilitation in Mardin

To protect historical and cultural properties in Mardin, particularly its architectural heritage and urban fabric and to

stress the importance of these as valuable inputs for the future and development of the city.

The project was launched upon a protocol signed by the GAP Administration, UNDP and Istanbul Technical University in December 2000. The Swiss government contributed a grant of 350,000 US $ to the project. The content of the project consists of socio-cultural researches, development of a guide and implementation strategy for the city center and realization of an implementation project in Sipahiler Bazaar located at the old trade center of the city. This pilot work will lay the ground for the implementation of a series of other similar projects and serve as a model.

b) Survey Of Archaeological Settlements in Southeastern Anatolia

Conducting assessments as to the geographical and spatial locations and present status of settlements in the GAP region that date back to the period extending from Paleolithic Age up to the end of the Bronze Age; their promotion at national and international platforms; publishing works on these assessments and findings and maintaining the project so as to cover relatively more recent settlements as well.

To attain the objectives stated above, a protocol of cooperation was signed on 30 May 2001 between the GAP Administration and the Foundation for the Conservation of Artistic and Cultural Heritage (TASK). Relevant work was started in June 2001 under this protocol. Firstly, land surveys were conducted in order to determine the geographical and spatial positions of antic settlements as well as their situation in terms of having been damaged. The project envisages the compilation and publication of the results of earlier surface surveys and excavations. Facilitating access to this information in various environments including printed materials, Internet, CDs etc. will provide a comprehensive documentation on the antic sites of the region.

The field work part of the project was started on 1 August 2001 and completed on 31 October 2001, giving the following results:

• Geographical and spatial positions and level of damage on antic settlements dating back to the period stated earlier;

• Identification of 388 such settlements;

• Both digital and analog photographs of these settlements (archive work is presently in progress);

• Assessments of critical geographical positions through global positioning system (GPS). At present, classification work is in progress to compile data for the development of GIS maps in near future.

c) Environmental Plan For Acirli (Mardin – Midyat) Historical Site

To protect Elet location in Acırlı settlement which is regarded as sacred by many cultures throughout the history and to facilitate tourism in the area.

Creation of an area in the historical site where unique cultural characteristics can be maintained.

Present State: The project design was completed and approved by the Council for the Protection of Cultural and Natural Properties. Implementation waits funding.

E. PROJECTS PLANNED

a) Promotion Of Cultural Properies in Turabdin Sub-Region

To revitalize the area in terms of cultural activities and tourism by materializing restoration and environmental rehabilitation activities: to promote culture, eco and faith tourism; to attract old inhabitants of the area back who have migrated out for various reasons; boost such income generating activities as wine making, silver works, potters,

stone working etc.; and to encourage economic, social and cultural development in Turabdin sub-region.

Scope:
- Identification of important centers in terms of natural properties and launching recreational areas in these centers;
- Halting existing movements of out-migration in Turabdin and introducing income generating activities for the local people;
- Promoting vineyards and wineries in the area; encouraging "private house tourism", contributions to employment and social welfare;
- Development of training programs to build awareness in governmental organizations and agencies, local governments, NGOs and local people;
- Identification of tourist routes in the area;
- Promotion of the area nationally and internationally and boosting income generation by providing facilities for boarding and accommodation.

Present State: Preliminary project description is ready and funding is needed for implementation.

b) Surveys On The Antic City of Dara

Dara Anastasiapolic Antic City is located about 30 km to the south of Mardin city center. The objective of the project is the rehabilitation and renewal of Oguz village, having a population of 2,600 with 360 households, located in the site area. In this context, the projects envisages to mitigate population pressure in the area, to create a new living environment confirming to modern standards with the opportunities presented by the socio-economic and geographical status of the area, to promote economic development by introducing income generating activities, and to protect cultural properties which reflect some important components in the history of civilization.

Scope:
- Partial transfer of the village to a new area;
- Re-starting archaeological excavations which were stopped in 1992;
- Environmental plans and development of infrastructure.

Present State: Work description of the project is ready and funding is needed for implementation.

c) Exploraion of Cultural Properties in The Barak Plain

The Barak Plain will be brought under irrigation upon the completion of Birecik Dam. The project envisages surface surveying and documentation work to protect and document cultural properties in the area, excavations in archaeological locations and publications to publicize the historical-cultural significance of the area.

Scope:
- Identification of prospective farming and irrigation areas in the Barak Plain;
- Identification of cultural properties existing in these areas;
- Documentation of identified cultural properties;
- Development of projects to protect those areas that will be directly affected by farming activities and irrigation and having these projects implemented by relevant agencies.

Present State: Work description of the project is ready and funding is needed for implementation.

PROJECT TITLE: SUB-REGIONAL DEVELOPMENT PLAN FOCUSING ON ADIYAMAN – NEMRUT. Preparation of a Sub-Regional Development Plan for protecting, promoting and using for tourism purposes cultural properties in Adiyaman as an important tourism center in the region.

Scope:
- Arrangements in Karakus Tourist Reception Pace and Tour Routes;
- Excavation and restoration works in Old Kahta, New Castle and Arsameia;
- Establishment of a museum in Kahta;
- Use of stone-built houses in Nemrut for tourism purposes;
- Establishment of Nature Park Facilities along Cendere stream.

Present State: Work description of the project is ready and funding is needed for implementation.

F. POLICIES AND STRATEGIES. The Upper Mesopotamia Region(Daily the Southeastern Anatolia Region) which has marks of various civilizations for thousands of years in its past possesses a very rich cultural infrastructure,

There is a very big incursion of both foreign tourists and businessmen to the region for a very long time,

There is an attractiveness of the region from the angle of three big religions and universal values,

The infrastructure of transportation and communication of the region are being developed day by day,

The region presents the exotic micture of east and the west in a very natural way,

In addition to all these above the region has a very specialized cuisine culture, traditional folk dances and heritages.

Such is the matter that for all the things mentioned above from the light of cultural-historical, socio-economic datum, the sources in the region should be brought in rapidly to the cultural economy.

There is an urgent need to present the natural richness and the historical sources both nationally and internationally. To do this there are a couple of politics and strategies we need to have, these are;

1. There is a necessity to form the historical and the cultural inventory of the region in a heathy way,

2. There is also another necessity for a strategic region plan work in order to develop the cultural economy as both short term or medium and long term regional based after the inventory,

3. In order to do all these works there should be a strategic co-ordination committee and this committee should have all the required authority,

4. In order to protect the rich historical and cultural heritage there should be a collaboration with the national and international foundations,

5. We need to improve the economic and social-cultural infrastructure very rapidly and radically,

6. In order to present the historical traces, heritages and traditional culture elements of the region both nationally and internationally there is a very urgent need to do a work,

7. In order to show all these values to all visitors there is a necessity to complete the infrastructure of the work in a very short period of time,

8. In order to present the traditional, cultural and historical values and also in order to contribute to the local economy of the region, there is a necessity to develop policies and strategies in the country's politic.

Conclusions and suggestions. The Southeastern Anatolia Region(Upper Mezopotamia) is a place having a very long historical past where all the universal values, three big religions, natural richness and cultural sources meet.

The region, which has a very important and valuable potential of cultural economy, has to have a permanent and effective work to be done in the fastest way.

Both nationally and internationally, the region having the cultural heritage and presenting to be the civilization cradle has to be brought in to the economy with the sources that it has.

For this reasons, there should be applied quickly in order to realize the value of historical and cultural heritage ofthe region. On a later stage, in order to bring into action the sources of the region to the economy we need to complete the infrastructure of the work.

In order to to to present the natural and the historical sources of the region and also to share the historical and cultural heritage with all the people both nationally and internationally and in addition to all these to contribute socially and economically to the region, the value of the cultural economy rises day by day in the region.

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НОВІ ГОРИЗОНТИ КУЛЬТУРНОЇ ЕКОНОМІКИ:
НА ПРИКЛАДІ РЕГІОНУ ПІВДЕННО-СХІДНОЇ АНАТОЛІЇ У ВЕРХНІЙ (ПІВНІЧНІЙ) МЕСАПОТАМІЇ

Анатолія завжди була колискою цивілізації, тому зараз має своє історичне, географічне та економічне значення. В останні роки із запуском Проекту Південно-Східної Анатолії (GAP), метою якого є соціально-економічний розвиток даного регіону, все більш популярними стали питання культури та культурної спадщини.

За наявності багатої культурної структури, вважається, що і геополітичні, геостратегічні структури регіону гратимуть важливу роль у культурній економіці регіону. Саме тому важливо ефективно сформувати культурну економіку та використовувати її для розвитку регіону, що містить такі цінні руїни як Зевгма і Хасанкейф.

В результаті даного дослідження планується створити інфраструктуру культурної економіки в регіоні, який має багаті історичні та культурні цінності, і представити її для використання на міжнародному рівні.

В першій частині даного дослідження коротко висвітлено історичні особливості, а також сучасні соціальні, економічні та культурні аспекти регіону.

В другій частині роботи узагальнено результати дослідження з питань створення вигід для регіону з існуючої культурної та історичної спадщини.

На останньому етапі запропоновано політику і стратегії залучення історичного багатства для забезпечення економічного розвитку регіону. Крім цього, ця політика і стратегії передбачають способи використання цього багатства і міжнародним суспільством.

Ключові слова: економіка культури; спадщина; Південно-Східна Анатолія, завершені-поточні і плановані проекти.

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НОВЫЕ ГОРИЗОНТЫ КУЛЬТУРНОЙ ЭКОНОМИКИ:
НА ПРИМЕРЕ РЕГИОНА ЮГО-ВОСТОЧНОЙ АНАТОЛИИ В ВЕРХНЕЙ (СЕВЕРНОЙ) МЕСАПОТАМИИ

Анатолия всегда была колыбелью цивилизации, поэтому сейчас имеет свое историческое, географическое и экономическое значение. В последние годы с запуском проекта Юго-Восточной Анатолии (GAP), целью которого является социально-экономическое развитие данного региона, все более популярными стали вопросы культуры и культурного наследия.

При наличии богатой культурной структуры, считается, что и геополитические, геостратегические структуры региона будут играть важную роль в культурной экономике региона. Именно поэтому важно сформировать культурную экономику и использовать ее для развития региона, который содержит такие ценные руины как Зевгма и Хасанкейф.

В результате данного исследования планируется создать инфраструктуру культурной экономики в регионе, который имеет богатые исторические и культурные ценности, и представить ее для использования на международном уровне.

В первой части данного исследования кратко освещены исторические особенности, а также современные социальные, экономические и культурные аспекты региона.

Во второй части работы обобщены результаты исследования по вопросам создания выгод для региона с существующей культурного и исторического наследия.

На последнем этапе предложено политику и стратегии привлечения исторического богатства для обеспечения экономического развития региона. Кроме того, эта политика и стратегии предусматривают способы использования этого богатства и международным обществом.

Ключевые слова: экономика культуры; наследие; Юго-Восточная Анатолия, завершены-текущие и планируемые проекты.

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FINANCIAL DEVELOPMENT AND REMITTANCES IN RBMU'S COUNTRIES

The aim of this paper is to evaluate the state of development of financial system from 3 of those countries that European Union has established relation through Partnership Program, added Romania also. The research is based on the empirical evidence about the structure and performance of financial systems from RBMU's countries (Romania, Belarus, Ukraine and Moldova). The results are correlated with the influence of remittances inflows in fostering the development of financial systems, especially banking systems, analyzed from the reverse casualty approach.

Key words. financial system, banking system, remittances.

Introduction. Contemporary approach of financial system mentions terms / concepts / processes / theories like complexity, crisis, cyclical economic, contagion, globalization, innovation, regulation, integration, moral hazard, sub-systems, sensitivity, systemic risk, stability, level of transparency and trust, etc.

The development of modern society was mainly driven by creation and flows of money – capital. Moneys' functions generated organization and development of a complex system called – financial system. All goods and services that we use today are due the existence and importance of financial system in economy. Continuing improving of households' wealth, efficient private capital allocation, achieving government investments, charitable fundraising by non-governmental agencies happened mostly due to evolution of global financial system. Through financial system occur the funds transfers (direct and/or indirect) from savers to investors. These transfers have positively impact on individuals' economic wellbeing [19]. In sort we point out that financial system represents some set of institutions and markets that interact in a complex manner, mobilizing funds for investments and trade [15]. As we know, in this system mainstays are institutions and markets, because from them interaction assets prices are fixed and liquidity is provided [2]. In terms of efficiency and stability, the financial system contributes to providing funds for investment and consumption, provides risk insurance instruments and platform for payments between the [5]. In this context very important is the individuals and companies' trust through existence of a certain optimal level of transparency [6].

Methodology The aim of this paper is to present a statistical – empirical analysis of 4 countries financial systems, especially banking system (RBUM – Romania, Belarus, Ukraine and Moldova). The results are correlated with the influence of remittances inflows in fostering the development of financial systems, especially baning systems, analyzed from the reverse casualty approach.

The research methodology is empirical approach through which we want to present the structure and depth of financial-banking systems from studied countries as well as correlation with remittances inflows. Used date is provided by official institutions like IMF, WB, National Central Banks, and others. The selected sample is studied in 2006-2015 period. We mention that some dates were collected with difficulties because of different ways to present data from different providers mentioned above. Thus, it may appear some discrepancies between those data at some point of time.

Literature review

Financial development. Financial markets globalization promotes the development of financial systems in developing countries through institutional reforms. Liberalization of goods and services markets, of labor markets, of capital markets stimulates involvement of developing countries to a global market sustained by openness of the advances economies. Those advance economies generates the right incentives for them to implement the hard measures that will enable emerging-market countries to grow rapidly. Exporters form emerging markets become more productive, and then they make developing investments that stimulate institutional reform to make financial markets more efficient and promote financial deepening [20]. To evaluate that a financial system is developed or not, financial theory presents us a number of indicators. In 2006, IMF published a complete Guide were is presented the conceptual framework, specification, compilation and dissemination and analysis of Financial Soundness Indicators. There are some evidences that differences in financial development between countries are because of the cumulative variation in their levels of state experience, precisely because of characteristic of early historical development. It seems that early-start development of a state provided premises for actually financial development of countries. The researcher mentions that the approach state antiquity can be used as alternative indicators of financial development [4]. Before these findings, the same researcher studies the effects of financial development and liberalization on knowledge accumulation. He showed that financial development has positive impact on generating of new ideas, and negative impact on them when is implemented financial reform policies [3].

Financial Development and Remittances. As we all know, workers' remittance represents an important source of foreign exchange earnings and for economic development, especially in developing countries. In scientific literature are some articles that studied the correlation between remittances and financial development and how financial sector development caches up the opportunities created by remittances. A study on Bangladesh economy, presents an empirical research for 1971-2008 annual data. The results show that remittances

have a significant positive effect of financial development, even though financial sector's development in neutral in its effect on the inflow of remittances [7]. It seems that the impact of remittances on GDP growth volatility is nonlinear and changes over then time and across countries. A high level of financial development helps remittances to have a high stabilizing impact. In the same area, another empirical study was made about impact of remittances on 19 Sub-Saharan African countries' financial development. Using the panel Granger for casualty testing approach, the researcher studied annual data over the period 1980-2010. For criteria 1. – Levels of liabilities as a proxy for financial sector development – the results showed that remittances have positive impact only in 4 countries – Niger, Senegal, Sierra Leone and Sudan – . The reverse impact analysis (effects of financial development on remittances) is positive only in 1 country (Gambia). For criteria 2. – Levels of credit to measure financial depth – the results show that remittances has positively impact on financial development only in one country (Sudan), with null reverse impact in all of those 19 countries studied [8]. Giuliano, Ruiz – Arranz [11] tests how local financial sector development determine the ways to take advantage of remittances. They analyses a sample of 100 developing countries and find that remittances boost growth in countries with less developed financial systems by providing an alternative way to finance investment and helping overcome liquidity constrains. Another evidence of study was that there could be an investment channel trough remittances especially when the financial sector does not meet the credit needs of the population. In the same ideea there are evidence that in developing countries (109 countries, period 1975-2007) flows of remittances is positive, significant and robust linked with financial development [1, 9]. In terms of quatitative indicators (total number of branches, total number of accounts per capita, the amount of deposits to GDP) witch evaluate the banking sector, some research results, about Mexico, show that remittances are strongly associated with greater banking breadth and depth [9]. On Africa, there were studied 36 countries (1980 – 2009), in order to evaluate the role of remittances on financial development and economic growth. The results confirm the ideea that remittances represent an important source of growth, with negative impact on growth volatility. Remittances are an complement force for financial development, even though, there are evidence that financial development does not boot economic growth (in studied countries). Therefore, a limit of freely flowing of remittances, in order to foster economic growth, could be the degree of financial openness. Study that if the financial openness of a country is increasing the remittances are more atracted, in a more safe way, less risky and less expensive thorugh formal channels. Testing relationship between remittances and financial openness (66 mostly developing countries, 1980-2005) researchers find a strong positive statistical and economic effect of remittances on financial openness.

The RBMU's Financial sector. Studying these countries – Romania, Belarus, Ukraine and Moldova – we found that the beginning of '90s years represents the new era for development of each financial system analyzed. In those economies, institution of national central banks, was organized and set up the objectives aligned with the international practices of other central banks, in order to create a modern financial system. Thus, we mention that The National Bank of Romania was created on 11/23 April 1880 and was functioning like independed central bank till 1946 when the communist regime took the power over Romania. In 1990, the National Bank of Romania was reorganized like it was before 1946, as a monetary authority specific for a market economy [24]. For Belarus country, the date April 1 1991 represents the moment when the National Bank of the Republic of Belarus was finally established, and the banking system started its modern period [27, 28, 29]. In the same year 1991, was established another central bank in this region – the National Bank of Moldova – on June 4 under Presidential Decree of the Republic of Moldova, in order to create and maintain monetary unit stability in its economy [22, 23]. Further, the National Bank of Ukraine become in 1991 a modern, open and independent central bank integrated into the European community of national central banks [32, 33, 34, 35]. These facts presented above shows that financial systems in those countries are in developing era, with the dominance of banking system.

The beginning of 2016 revealed a financial system in RBMU's countries, dominated by banks activities (see Table 1). In each studied country, total of banking assets as % GDP are above 55% or more (Belarus amounted 73%, the highest level). That means that the financial intermediation is driven mainly by banks. With all of that, if we look at the European Union data we see that average financial intermediation in this region totalled 284,6% in 2015Q3. In 2015, Romania had the lowest level of financial intermediation in the European Union [25, p.47], about 75.5%, but, in the same time, Romania were placed among EU countries with best capitalized banking sector. Romania has a developing financial system based on activities of credit institutions (banks that take deposits from the public) and other non-bank financial institutions. In the recent years, we notice that banking assets rose up to 3-5% annually, but non-banking financial assets grew up much faster. For example, in 2015, the assets of pension funds grew up with nearly 28%. These facts could be generated by low level of bank deposit interests that determine increasing interest for other financial assets with higher income for investors (natural persons and legal entities). We think that is driven also by developing financial education programs among investors, promoted by different commercial banks, National Bank of Romania, Bucharest Stock Exchange, Educational Institutions, etc, which improve awareness about the importance of developing financial system into market economy.

In structure, private sector loans hold the largest share of Romanian banks assets (52%, December 2015) which are divided near equally between corporate and household sector. A significant component of this structure are domestic loans given to the general government (70% of government securities are held by the Romanian financial system) [25, p.48]. On the other site, bank liabilities are formed by 60.8% private sector deposits. Further, 2015 reprezents the most active in the last years, considering the number of mergers and acquisitions, leading to a reduction of number of credit institution (36, 7 of those being foreign branches of financial institutions from other country. In the years who become we will face other type of transformation considering the international macroeconomic environment, with very low interest rates (key rinterest being now at 0% at European Central Bank, ECB 2016) and national environment, were the government designed and adopted legislative acts which support borrowers, irrespective to their problems.

Table 1. **Banking system of RBMU's countries (data reported at the beginning of 2016)**

ISO 3166 code	Romania – RO	Belarus – BY	Ukraine – UA	Moldova – MD
Disclosure / transparent information about financial system in specific documents	Financial Stability Report since 2006	Financial Stability Report since 2007	Financial Stability Report since 2016	Financial Situation of the banking system since 2012
Local Unit Currency symbol	ROL	BYR	UAH	MDL
Official exchange rate 2015 (LCU per USD, period average)	4.005667	15,925.99	21.8447	18.81848
GDP (USD million) 2015	177,954.49	54,608.96	90,615.02	6,551.16
Key policy rate	1,75%	18%	14%	9%
Number of credit institutions/banks	36	26	116	11
Bank capital to asset ratio,%	8,3	12,8	8	12,7
Banks' assets (LCU million)	417,000.00	630,500,000.00	1,293,104	69,095.6
Banks' assets (USD million)	104,102.51	39,589.38	59,195.32	3,671.69
Banks' assets as % GDP	59	73	65	56
The share of banks with foreign capital in total assets, %	91	32.5	36	82,9
Concentration level (the share of the five banks in total assets), %	57,4	79.5	54	66.7
ROA, % (2016Q1)	1,3	1,4	-2,4	2,7
ROE, % (2016Q1)	11,7	11,4	-25,9	15,7
Non-performing Loans Ratio, %	12,3	6,8	28	14,4

*Sour*ce: data collected from official documents of NBR, NBRB, NBM, NBU, WB, IMF, ECB

As we can notice from Table 1, in the Republic of Belarus are active 26 banks who manage 73% of GDP by assets. Among those just 32.5% of Belarusian banking assets are holds by foreign-owned banks (91% in Romania, 2016). In 2015, the banking sector's capital adequacy indicators were higher than requirements set for an individual bank. As in Romania, the most significant part of bank liabilities are deposits attracted from natural depositors (they increase with 43.5% in 2015). This means the popularity of banks among Belarusian people driven also by low diversification of financial services offered by banks and also by other non-banks financial institutions. Considering the national macroeconomic environment, with a declining in value added of the real sector economy, banking sector performance slightly decrease. Thus, the most significant risk was credit risk. Moreover, the most known Rating Agencies – Fitch Ratings, Moody's Investor Service and British Think Tank Economist Intelligence Unit – evaluated Belarusian banking system like "fundamentally weak" referring at a possible worsening of the bank's assets quality, worsening of operational environment for financial institutions due to a sum of causes (high inflation, devaluation expectation, vulnerability to external shocks like declining of the Russian economy), and also, lack of confidence in the national currency witch influence the increasing outflow of deposits in denominated in Local Unit Currency – BYR and the increasing with 61% the inflows of natural persons' deposit in foreign exchange [29, p.11-13].

Some of characteristics about banking system mentioned for Romania and Republic of Belarus are specific also for Moldova and Ukraine. The most important financial activities are realized by banks but not to the higher level. In both countries financial intermediation (measured by banks' assets to GDP) reached the level of 65% to GDP for Moldova and 56% to GDP for Ukraine. In Moldova operates 11 banks, of which 4 are branches of foreign banks and financial groups. Among those 11 banks, 3 of them direct entire banking activity. At the end of 2015, those 3 banks sum 66.7% of the banks' assets in Moldavian baking sector. Moreover, for the same banks, the National Bank of Moldova established a special supervision procedure because of issues related to non-transparent shareholder structure, engaging in high risk lending operations, etc. [21, p.6]. Despite all that, the results of a National Bank of Moldova owns study, presents a banking sector with small vulnerabilities in terms of sensitivity to market risk and profitability [21, p.76].

Ukrainian banking sector is in fully transformation process on the international way. From the beginning of 2015, the national authorities adopted some very important legislative initiatives specific to the banking activities like implementation of IFRS to all Ukrainian banks, so banks are obligated to report real information about their assets. Starting with those drastic changes the Ukrainian banking sector will become fully transparent for investors and depositors. Thus, we will face a passing from a banking sector that in the last two years lost almost 80 banks thorough insolvency process. The main issues were about high concentration of loans related to parties, the degree of transparency of shareholder structure and engaging in high risk operations, deterioration in the solvency of borrowers due to reduction of incomes of the population and unprofitable activities of many companies, the outflows of deposits, exposure of creditor's rights, geopolitical risks (related with the annexation of the Crimea and military actions in eastern Ukraine. Those facts determine also the increasing level of concentration in retail deposits at the first 5 largest Ukrainian banks (up to 62% in March 2016).

Besides all of that we presented above, even these 4 banking sector are in developing way, they have the main importance in sustain the functioning of those real economy. In the last 10 years we could notice a quite positive performance of those banks, except the last 2-3 years, when some external and internal shocks manifested, as we mentioned above. (Fig. 1-6).

In the previous 10 years the four banking sector presents a good capital adequacy of deposit takers, with the lowest level of 12.3% recorded in Ukraine at the beginning of 2016 (19.1%- RO2016Q1, 16.3% – BY2016Q1 and 13.9% – MD2014). These levels are sustained also by values of ROA and ROE, which both indicators reflects the efficiency of using their bank assets or capital. Except Ukraine, in all other countries banks record a positive performance of assets with levels of ROA a near to 1.2% in the last year (1.3%- RO2016Q1, 1.4%-BY2016Q1 and 0.9% – MD2014). The same trends for ROE indicator when were reported levels of 12.3%-RO2016Q1, 11.4% – BY2016Q1, 5.9% – MD2014 and -20.0% – UA2016Q1. The visible vulnerability seems to have Ukrainian banks regarding problems with banking assets quality in the loans portfolio, who reached the highest level of 30.4% in 2016Q1 (11.3%- RO2016Q1, 11.5% – BY2016Q1 and 11.7% – MD2014).
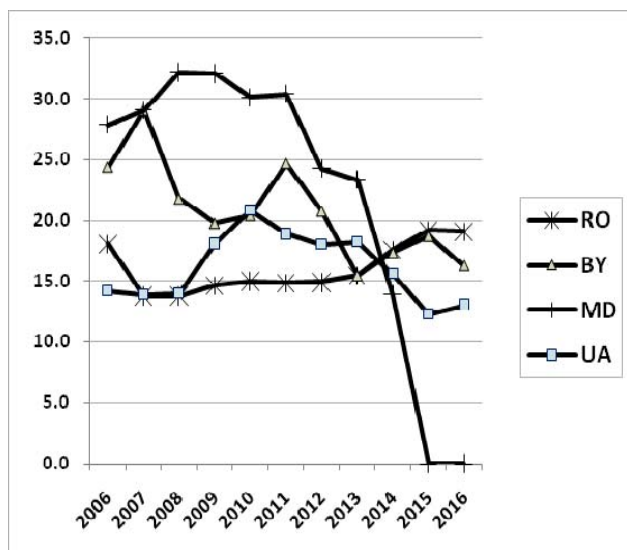
Fig. 1. Bank Regulatory Capital to Risk-Weighted Assets

Source: IMF, Global Financial Stability Report, October 2016, http://fsi.imf.org/.
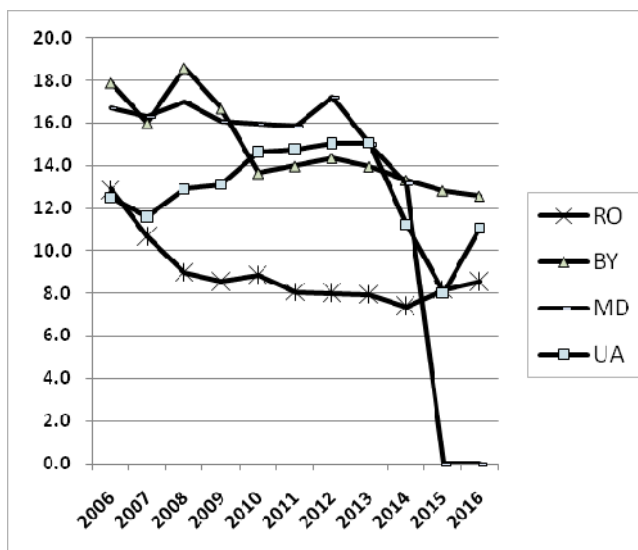
Fig. 2. Bank Capital to Assets
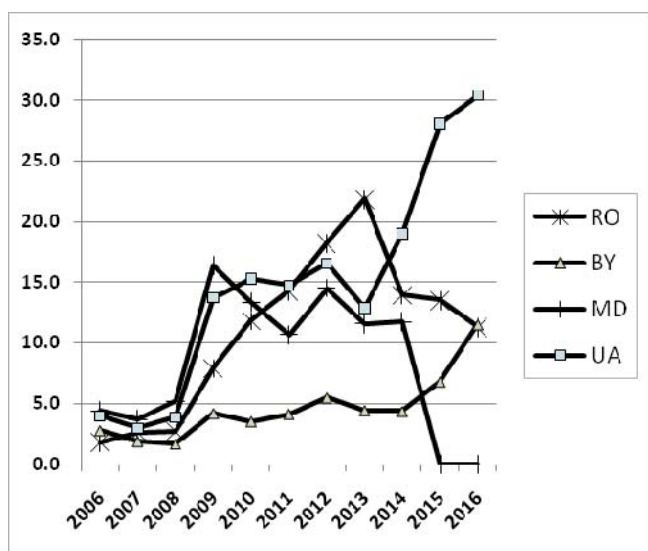
Fig. 3. Bank Nonperforming Loans to Total Loans

Source: IMF, Global Financial Stability Report, October 2016, http://fsi.imf.org/.
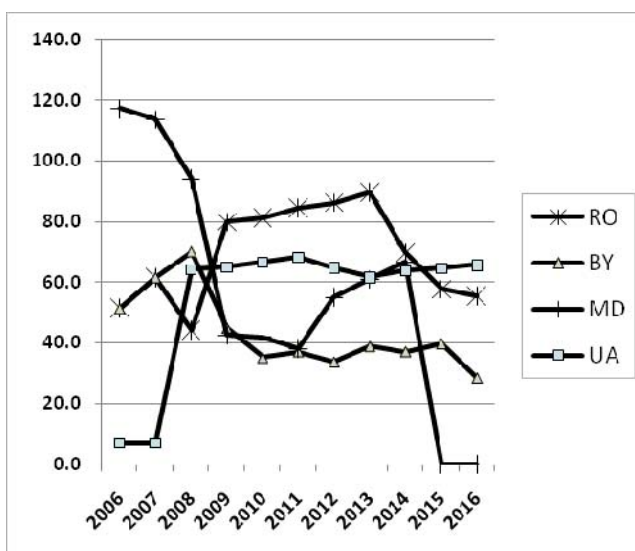
Fig. 4. Bank Provisions to Nonperforming Loans
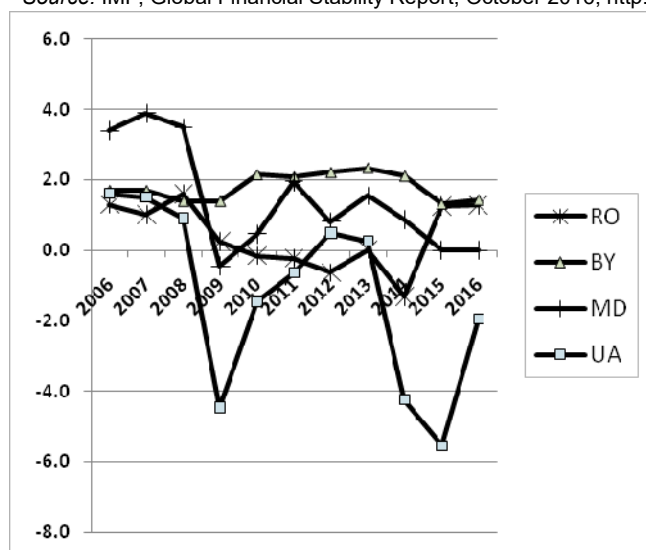
Fig. 5. Bank Return on Assets (ROA)

Source: IMF, Global Financial Stability Report, October 2016, http://fsi.imf.org/.
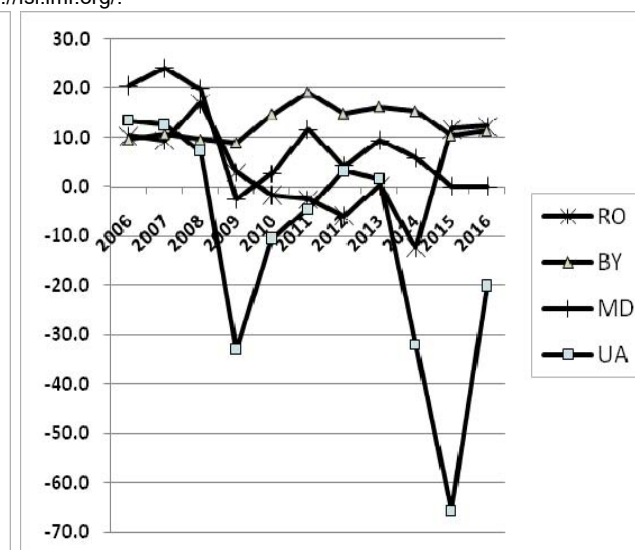
Fig. 6. Bank Return on Equity (ROE)

Remittances in RBMU'S Countries. According with international forums, several hundred million of people live outside their home countries of birth, working in host countries for their families and relatives. Each year those people send home billions of dollars using financial and nonfinancial channels. Thus, remittances are important for their size, and further for home economies (mostly for developing countries like RBMU). At the global level, seems that remittances tend to increase overall level if the main risks are remaining at an acceptable point (exchange rates, remittances transaction cost, the statute of migrant workers in host countries). In 2015, Personal Remittances received were about 2.9 billion USD for Romania, 0.7 billion USD for Belarus, 1.5 billion USD for Moldova and nearly 5.8 billion USD for Ukraine. (Reporting those levels

to GDP, for the same year, Romania reached 1.65% of GDP, Belarus 1.27% of GDP, Moldova 23.4% of GDP and 6.45% of GDP for Ukraine. We notice that remittances are very important for Moldova and Ukraine. This is justified also by the level of GDP per capita for those two countries (1,843.24 USD in MD and 2,114.95 USD in UA) being notable below levels recorded in Romania and Belarus (8,972.92 USD in RO and 5,740.46 USD in BY). (Fig. 7-10). If we study the countries data of Personal Remittances receives as percentage of GDP and GDP per capita we notice a quite good correlation among those two indicators. But for a more relevant analysis, is needed supplementary financial research above a more long and complete time series data, which we intended to do.
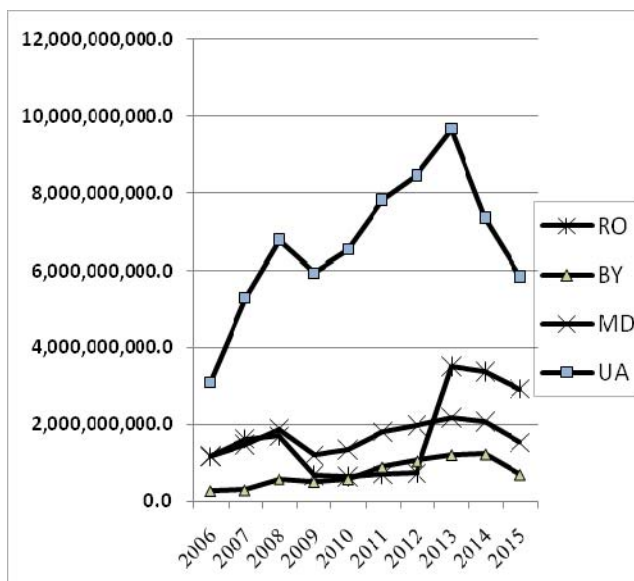
Fig. 7. Personal remittances, received (current US$)
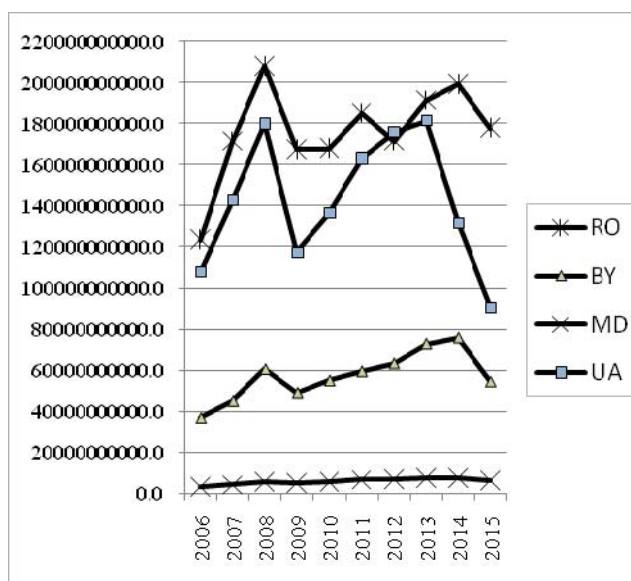
Fig. 8. Table 10 GDP (current US$)

Source: WB, Popular Indicators, October 2016, http://databank.worldbank.org/.
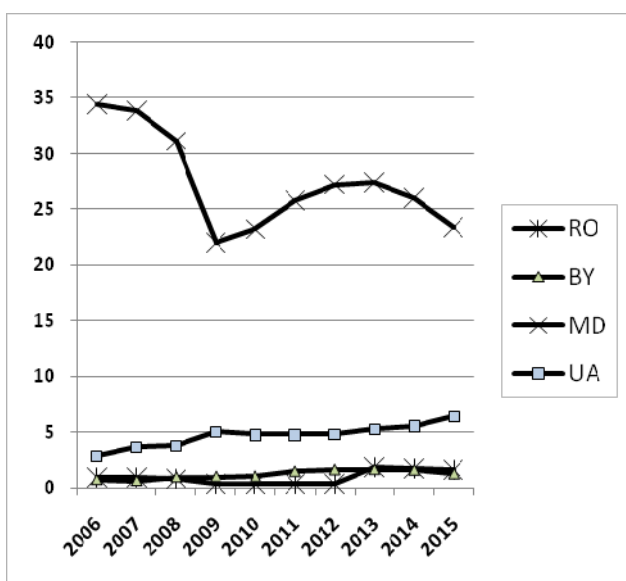
Fig. 9. Personal remittances, received (% of GDP)
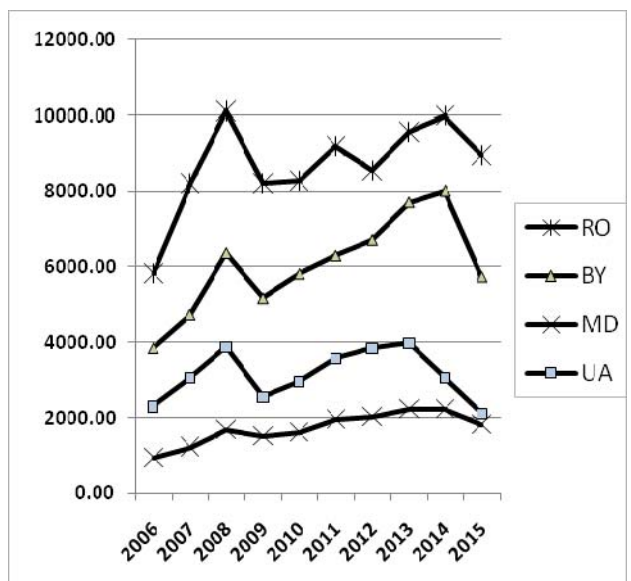
Fig. 10 GDP per capita (current US$)

Source: WB, Popular Indicators, October 2016, http://databank.worldbank.org/.

Considering the available data for those countries, in our opinion, a way to verify if the personal remittances received had positive effect of de degree of financial development is to study the relation between personal remittances and financial inclusion degree (in the World Bank acceptation). Personal remittances determine increasing income for the migrant workers relatives, thus, relatives might demand more products and services offered by financial – banking industry. For example people are opening more banking accounts because they have more money. Motivation for more diversified financial products and services could be the desire to save money for some future spending and investments, to create some collateral deposits for future loans, and so on. In this way it will be an improving of financial access (financial inclusion) and thus improving financial development. According to Global Partnership Financial Inclusion platform launched by G20 countries, financial inclusion is a key enabling element in the fight against poverty and achieving inclusive economic growth. If people participate more active in the financial system, they could improve their wealth and the skills in start and/or expand businesses, invest in education, manage money and risk, etc. Corroborating with the improving incomes per capita in RBMU's countries driven by remittances, we notice some improvements of few financial inclusion indicators, for reporting years 2011 and 2014. There are more people bankable, with more bank accounts owned by adults. Percentage of adults who opened a bank account raise from about 45% to 61% in Romania, from 59% to 72% in Belarus, from 41% to 53% in Ukraine and slight reduction in Moldova from 18% to 17.8%. The same evolution had another indicator – adults who saved at a financial institution (% age 15+) – which increased from 8.7% to 13.3% in Romania, from 6.8% to 14.9% in Belarus, from 3.5% to 6.8% in Moldova and from 5.4% up to 7.8% in Ukraine (Table 2).

Table 2. **Financial Inclusion indicators in RBMU'countries**

| Indicator	RO		BY		MD		UA	
	2011	2014	2011	2014	2011	2014	2011	2014
Account (% age 15+)	44.59	60.84	58.60	71.98	18.07	17.76	41.27	52.71
ATMs per 100,000 adults	64.91	65.14	41.16	NA.	28.54	36.13	84.07	94.46
Branches per 100,000 adults	35.27	30.75	2.10	NA	11.24	12.09	1.60	0.76
Borrowed from a financial institution in the past year (% age 15+)	8.37	11.85	16.05	14.17	6.42	6.60	8.15	8.31
High frequency of account use (% age 15+)	NA	12.62	NA	19.41	NA	2.86	NA	9.39
Saved at a financial institution (% age 15+)	8.69	13.27	6.81	14.88	3.54	6.83	5.41	7.84
Average transaction cost of remittances (%)	7.55	6.70	2.43	2.10	9.06	9.84	6.92	6.27

*Sour*ce: Wolrd Bank Database, http://data.worldbank.org

Financial Development and Remittances Model in RBMU'S Countries. Starting from theoretical and empirical evidence we mention again that a high level of financial development helps remittances to have a high stabilizing impact. And also, a high level of remittances could improve the financial development. In this context, we present the main factors engaged in this process which we consider it is a circular process (Fig. 11).
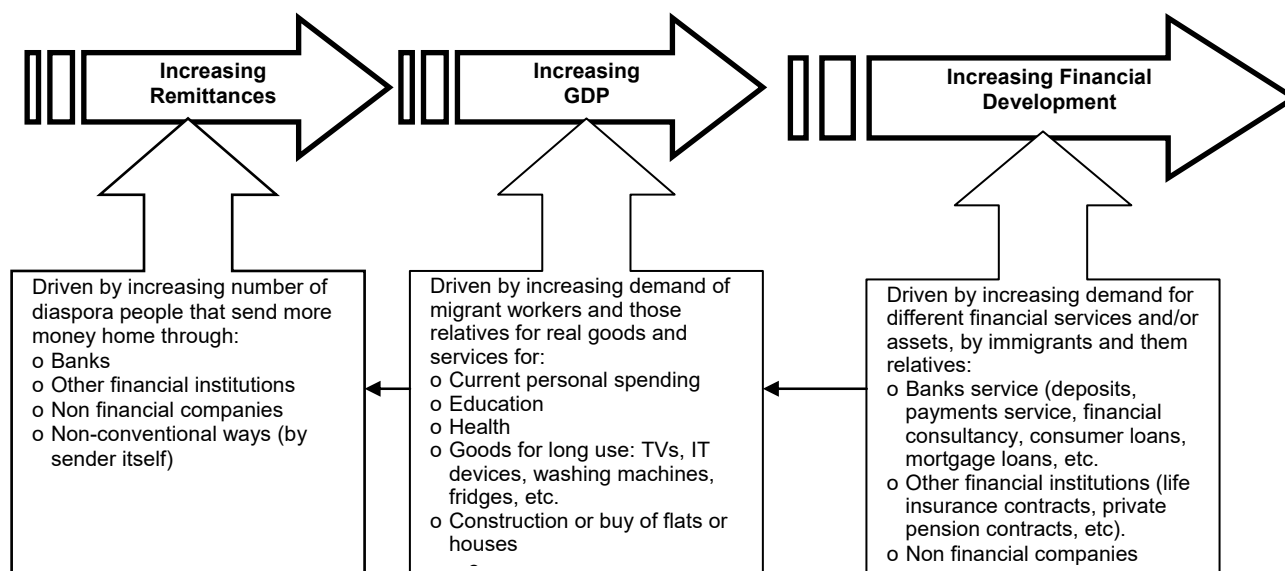
Fig. 7. The circle of Remittances effects on Financial Development in Economy

Source: author

As we showed above, those four countries receive important remittances volume for their people. To catch up the positive effects on financial sector development we consider to take in consideration the main elements of the below equation. In our opinion, in this context, financial development depends of inflows of remittances, volume of GDP, diversity of demand and supply for financial-banking products and services.

$$FD_{RBMU} = f(R, GDP, FB_{DS}), \qquad (1)$$

where R – Inflows of personal remittances, volume; GDP – Gross Domestic Products, volume; FB_{DS} – Financial-Baking Demand and Supply, volume and diversity

Further, personal remittances could be affected positive or negative by some unexpected fluctuation of immigrant's policies of home and host countries, and here is worth to mention the new possible approaches of this issue by the larger host countries like Great Britain, France, United States, Austria, Germany, and so on. And also, the next trend of global economy in terms of performance of real economy, demand and supply for labour force, fluctuation of exchange rates, and also the regulation of remittances process etc. If in RBMU countries the trend of remittances is improving next years, we think that authorities in partnership with financial industry could create, implement and develop some national programs in order to catch up the same trend in financial development too. In this situation, a proposal could be an analytical study among migrant workers in terms of volume, frequency of working abroad, structure of family and relatives in host and home country (if that worker has entire family in host country or not, because if it has the entire family abroad will send less money home and has less motivation for financial inclusion), volume and frequency of money sent it home, financial education level, interest in home countries on long time. We consider that directly related with financial development is the level of financial development of migrant workers and his relatives. This means if those persons have minimum level of financial knowledge and behaviour in term of savings, borrowing, making payments and money/wealth management to avoid some risks. Unfortunately, even the most advanced economies do not have such best practices. Just from 2011, G20 countries created those Financial Inclusion indicators through we could evaluate the degree of financial education.

In the same time, financial –banking products and services in terms of diversity and volume possibly be improved from two parts. One side must be financial-baking supply which, in our opinion, should be built on trust. Trust on soundness of financial-banking activity (monitored by regulatory and supervision authorities, in our cases central banks – NBR, NBRB, NBM, NBU) and in professionalism of banks and other financial institution who attract money from RBMU's people (in position of individuals or company). Financial industry could be more active in promoting financial education programs in order to bring awareness of financial education/financial system importance for individuals and economy. Banks and Insurance companies should make partnerships with educational institutions and individual unions in this sense. From our experience, people don't know what financial education mean, what are effects of savings and emergency funds of own life, etc.

Conclusion & Discussion. The aim of this article was to evaluate the state of financial system in 3 of those countries which established relation of Partnership Program with European Union. We mean as Republic of Belarus, Moldova, and Ukraine. In order to make some relevant assumptions in this context, we added for this study, also Romania, who is member in European Union since 2007. Thus, our analysis comprise one member of EU that has structured and regulate a financial system on the EU directives and best practices of European Central Bank, and another 3 countries which are also emerging and developing countries but in different ways and trends. Regarding the "image" of financial development in RBMU's countries, our results shows 4 financial systems dominated by deposit takers (commercial banks), that manage the most part of financial assets in each countries. It seems that, Romania has the most diversified financial system. Romania financial system comprises credit institutions (deposit takers), insurance companies, private pension

fund, investment funds and non-bank financial institutions. Despite all that, in all those countries (including Romania), financial intermediation is at a low level (around 80 of GDP) comparing in some European advanced economies, were this indicator is more than 300% of GDP. We conclude with the opinion that in RBMU's countries financial system in based on banking activities and it should be developed though increasing process of soundness of financial system based on trust and professionalism. Furthermore, we think that remittances could be one of those channels through individuals could determine, in some way, development of financial system. It could be a "down-to-up and up-to-down" approach (from individuals to institutions and conversely) starting from the considerable volume of inflows of remittances in RBMU's. Finally, we present the importance, in this process, of improving financial education awareness among migrant worker and his relatives.

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РОЗВИТОК ФІНАНСОВИХ ТА ГРОШОВИХ ПЕРЕКАЗІВ В КРАЇНАХ RBMU

Метою даної роботи є оцінка стану розвитку фінансової системи в 3 з цих країн, з якими Європейський союз встановив відносини в рамках Програми партнерства, додавши Румунію також. Дослідження засноване на емпіричних даних про структуру і діяльність фінансових систем країн RBMU (Румунії, Білорусії, України та Молдови). Результати корелюють з впливом припливу грошових переказів для сприяння розвитку фінансових систем, особливо банківських систем, а також зі зворотним каузальним підходом.

Ключові слова. фінансова система, банківська система, грошові перекази.

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РАЗВИТИЕ ФИНАНСОВЫХ И ДЕНЕЖНЫХ ПЕРЕВОДОВ В СТРАНАХ RBMU

Целью данной работы является оценка состояния развития финансовой системы в 3 из этих стран, с которыми Европейский союз установил отношения в рамках Программы партнерства, добавив Румынию также. Исследование основано на эмпирических данных о структуре и деятельности финансовых систем стран RBMU (Румынии, Белоруссии, Украины и Молдовы). Результаты коррелируют с влиянием притока денежных переводов для содействия развитию финансовых систем, особенно банковских систем, а также с обратным каузальным подходом.

Ключевые слова. финансовая система, банковская система, денежные переводы.

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MARKETING CONSIDERATIONS ON BRAND COMMUNITIES

Most consumers spend an important part of their free time looking for online information about the brands before taking a decision to purchase. The Internet is the main factor which has led to a considerable increase of the time allotted by consumers for search and comparing information about brands, as a step preceding the decision to purchase and also one of the most important factors that influence the interaction between the brand and the consumer.

Although the general trend is that the public to become more active and more involved in the choice of the brand, consumer's responses to its messages obviously depend on cultural, social or economic factors. The work has the purpose to clarify what brand community means and how it appeared – if it was really built from scratch or it has already existed in a latent way and it must only be recognized – the characteristics of successful communities, which of the objectives of the brands can be achieved by means of these groups, what is the role of social media in the development of these communities, what kind of types of members are likely to be encountered inside of the online communities and what is their proportion for each and which are the research methodologies that can give support to companies in monitoring these groups.

Key words: digital strategy, social media, online brand communities.

Introduction

The instant attractiveness of the brands is mostly due to the story behind them. What does this 'story' mean in Social Media? At the beginning, there were mostly a few ingredients – humanization, involvement, impulses and commitment. There are brands which are simply adored by consumers, others are mentioned in conversations between friends and others are kept only for themselves. The translation from behind these actions is called feedback, and this feedback is to be found in the mission of each brand storyteller. It is about that extra powerful emotion which returns to the storyteller with each action of the consumer.

How do we define Social Media? In the first place we must say it had the ability to intervene and to give value to quick reaction of feedback. This quickness is the one that made the differentiation. By social tools, consumers were encouraged to be actively involved in the story about the brand, at each step of the creation process. Nothing to frighten or unfollow, freedom of expression urged the consumer to write their own story in connection with the

brand and Social Media has only enabled the tale to be liked only by a simple click.

However, behind impulses and small "commitments" of the consumers, brands must constantly socialize with big ideas, agile thinking and bold actions to inspire passionate online consumers in an environment that is fairly new. Brands must know how to communicate through social media invented tomorrow, where the consumer is already ready to get involved. Social Media works so quickly and brands must adapt accordingly. In fact, the brand story is the same, but it should allow consumers to quickly connect to it. Brands like Nike, Apple, Starbucks and Coca Cola are among the first that through Social Media knew how to encourage their fans to help the brand to become one of the most popular social brands. All these big names on the market were able to approach people, to create a promise for them, to inspire their attitude or simply to teach them to be cool.

Besides all these, Social Media knew how to create the story of the brands by visual means (ex. Timelines on Facebook, videos on YouTube or photo albums on Flickr, Instagram, etc.), thus capturing a bigger market and activate consumers.

And all this time, the great advantage of Social Media is considered to be the humanization factor: it invigorates consumers' mornings by creating their own story, not just the brand itself. Social Media managed to shape costumers' behaviour, relationships and classic brand strategies [8, 12].

Definitions and types of brand communities

The idea of community, as geographical area based on familiar and emotional values went through a process of adaptation and transformation especially due to the development of Internet and communication technologies which has led to the emergence of online brand communities, tremendous businesses opportunities, in the light of the impact on the purchasing behaviour of consumers [1]. Online brand communities made possible to acquire the same values and identities across geographical distances, identities built around certain brands [4].

Online communities, in general, can be of several types (see Tab.1)

Table 1. **Different Types of Online Communities and Hybrid Communities**

Type	Definition	Characteristics
Community of Action	Community built with the purpose of using the collective power in order to make change in the world	• focus on reference points • update progress • facilitate the commitment of the group and the exchange of best practice în order to achieve the goals
Community of Practice	The community who carry out the same activity	• focus on what is new and proved to be true • search for reliable surveys • the agreed field of knowledge
Community of Place	The community united for geographical reasons	• focusing on events, people or local activities • mutual cycles (people who support mutually)
Community of Interest	The community of people who share a common interest	• focus on the depth to the considered interest • socializing discussions which would lead to the achievement of the objectives • impulses to much more profound discussions
Community of Circumstance	The Community united by a common situation or an external challenge	• focussing on the support granted to deal with the situation • a lot of discussions to getting one another, making relations
Community of Place and Action	The community of people who want to change something in their area	• focusing on local problems and protection of the served community, minorities or groups of interests
Community of Place and Practice	The community from a geographical area of the people who carry out the same activity	• the focus on making local connections between the people in the same field to increase competition în comparison with other regions
Community of Place and Interest	Community of people who share interests in a particular area	• focusing on local informal meetings where people with similar interests can meet and make friends
Community of Place and Circumstance	Community of people who face the same problem in their area	• focusing on bringing all local groups together and provide a real significant support
Community of Action and Practice	Community of people who want to change something in their field	• concentration of forces on changing or improving the respective field, or prevent completion of something positively related to that field, especially în ca se of new technologies
Community of Action and Interest	Community of people who want to change something about their common interest	• focus on preserving that special something related to their interest, the change or improvement of the interest
Community of Action and Circumstance	Community of people who want to change something about their situation	• focusing on changing support to that circumstance or long term helping those who are in a similar situation
Community of Practice and Interest	Community of people with the same activity but share another common interest	• focusing on people who have a certain belief or interest in the subject. It usually creates hesitation to social activities around common interest
Community of Practice and Circumstance	Community of people participating in the same activity and are facing the same situation	• focusing on how those people go through the unique situation which are facing with. It is based on the support and it often involves latest findings
Community of Interest and Circumstance	Community of people who share the same passion and face similar situations	• focus on discussions about common interest or support for self-discovery activities

Source: adapted after feverbee.com

More than 90% of community projects, especially those related brands, consists of communities of interest. The disadvantage is that these communities of interest are competing in the consumer's mind with their free time, this is the reason they develop the hardest of all communities.

Muniz & O'Guinn [15] refers to online brand communities as "Specialized, non-geographically bound community, based on the structured set of social relations among admirers of the brand".

When we talk about the benefits that online communities offer to their members, we refer to the following (Malooney – Krichmar and Preece [15], Butler et al. [5], Johnson and Ambrose [11], Preece [16]):

• exchange of information (access to more information by involving the whole community members)

• sense of belonging (community members come to feel they belong to something, by placing them where they can be themselves). It gives the members the sense of security that they belong to a group and new friendships may be created.

• mutual support (it allows getting help from others who are able to offer). Members help each other in solving life problems or by providing opportunities such as jobs or other resources that members would not otherwise have access to. All this in an environment of trust, fairness and empathy.

• great influence (being active in a group gives members more influence than they could have individually)

• flexibility (access to the community is flexible and it requires an investment of time as flexible)

• exploration opportunity (it allows members to explore things together that otherwise they would not have been able to: new ideas, resources, experiences)

• permanent presence (the ability to access messages, articles, community hyperlinks, images, text messages anytime, the ability to easily control each community member's involvement)

On the other hand, the benefits offered by online communities, brands around which are created, relate to: customers' fidelity (via the opportunity to obtain information on their needs and expectations and to improve the customers' experience), increase public awareness and visibility and the possibility to improve the image quality, getting ideas of new products or of improvement of the existing ones or processes, time saving with the collection and distribution of information.

Online brand communities have certain characteristics as a result of the interaction of its members [4]; they must be taken into account by brand managers in order to exploit the opportunities in achieving results: participation level and interaction of members in the community and between them; the quality of relationships in the community, given by the level of consumer satisfaction related to benefits; the identification of community members as part of the brand; the quality of communication within the community, measured by relevance, frequency and duration. Online brand communities as marketing tools contribute to business development, as far as brand managers take into account four factors identified above.

Objectives achieved through brand communities

The community is the group of people whom you always have close, that you can always rely on and who involve themselves in the consolidation and promotion of a brand. A community must be an exclusive group (club, if it is to be called so), consisting of people who support constantly a brand that offers them more benefits than a simple audience.

To have blog readers have or fans on Facebook does not mean that you have created a community no matter how often they would interact with you. They are nothing else but an audience that has developed in time. The audience follows you online and is aware of what you do – so it can leave anytime. Community does more than follow you – it helps to create and promote content to the audience, so it is part of your team. The community will not leave you as long as you manage it properly.

The community should be a group of people large enough to be manageable and close relationships with them must be created. The more effective the communication campaigns are, the greater the audience and the number of customers. But for the community the same communication campaigns do not work. Increasing community is an activity more related to human resources than communication. New members of a community should be recruited and passed through a selection process based on motivation, involvement and interest. Communication campaigns are meant to be received by the audience and have a certain effect as well as converting them into customers.

The community, like any marketing team, can help in creating content for the media – especially for blogs and Facebook becoming true endorsers of a brand. The more people there are in the community who are bloggers or journalists, the more advantageous. The most important lesson offered by inbound marketing is that general public is not interested about brands, but it is interested to be told about how one brand or another can offer solutions to their problems.

The strategy of creating a community can apply for (almost) any business. The most important thing is that the community always must be an exclusive group that is not open to anyone. Exclusivity brings quality which ensures a higher level of success.

A community is based on an honest commitment. The story is not related to the "prizes", but it is about to share the same values, to fight for the same cause, to spend quality time together or to inspire one another. Commitment based only on immediate gain is not sustainable, long-term loyalty cannot be built on material benefits.

The life cycle of online brand community

The concept of life cycle of online community is based on research conducted by Iriberri and Leroy [10] and it is used to determine at what level the community is at present and where it wants to be in the future. The concept was developed by theorists and practitioners and it has the following stages: inception, establishment, maturity, mitosis / death (see fig. 1).

The first stage of the life cycle of online brand community begins when the brand interacts with the target audience and ends when the community has gathered a mass of critical members. We can say that there is a critical mass when at least half of the community activity is generated by its members and not by the community manager. At this stage, the focus should be on the following activities: inviting members to participate and keeping them active, initiating discussions and encouraging members to participate in these discussions, creating relationships with community members, creating interesting content for community members, organize regular events online.

The second phase of the life cycle of online brand community begins once a critical mass of members was formed and ends when 90 % of the work community is generated by its members and they begin to develop the sense of community. At this stage, the following activities are required: inviting members to participate and keeping them active, initiating discussions and encouraging members to participate in these discussions, creating relationships with community members, creating interesting content for community members, organizing regular online events and recruit volunteers, promotion of the community activities, collecting and analyzing data, managing possible conflicts between members.

The third stage-maturity, begins when more than 90% of the community activity is generated by its members and

ends when the activity is entirely self-sustained and the sense of community is very high. The specific activities of this stage are: to stimulate community growth, the leadership of the community, recruiting volunteers and training them to take over specific activities from the previous phase (increase and create, managing discussions and answers, creating relations between the members, events and activities), development of the sense of the community by sharing evolution, exclusivity, more powerful personality, optimize the platform and establish indicators for monitoring the activity.

The fourth or last stage, mitosis or death begins when the community is entirely self-sustained and ends when it is divided into much more focused smaller communities. This is usually due to the fact that the community becomes too large and its members feel increasingly less connected with the others. Once the community has reached this level, the number of members begins to decrease. The solution in this case is dividing the community into smaller groups based on friendships already created or based on more specific interests. A community can be divided into groups according to demographic, geographic or psychological criteria and it starts its own life cycle by the received supported until it will be self-sustained.

Inception
Slow, direct, growth
Limited levels of engagement
No sense of community
0 – 50% activity initiated by community

Establishment
Referral/Direct growth
Medium levels of engagement
Limited sense of community
50 – 90% activity initiated by the community

Maturity
Referral/Promo growth
High levels of engagement
Strong sense of community
90 – 99% activity by the community

Mitosis
Community splits/grows into more focused groups
Repeats from inception for each unique group

Fig. 1 The four stages of online community development

Source: feverbee.com

The key of developing a clear and coherent strategy is to understand the life cycle of the online brand community. Once the strategy, the targets, the indicators are defined, the life cycle of the community becomes a map that helps in understanding how the goals will be achieved. Determining the stage of the life cycle of a community, involves the evaluation of three important indicators: community development, engagement and the sense of community. The development of the community means to understand the evolution of the number of active members (not registered) of the online community. This can be measured by the number of members who have contributed to the community in the last month. The difference between a single input and respectively more inputs is the member's engagement. The more the community members are involved the more developed is the community. It is not at all easy to keep the community members involved over a long period of time. Measuring this indicator can be achieved through: the average number of contributions of the community members (active), its average number of answers to a question, the average time to receive an answer to a problem, the average number of visits of a member (active). The third indicator, the sense of community takes into consideration several factors such as: membership, influence, wish fulfilment, sharing emotions. It can be measured by a score derived from the results of a research model developed by Chavis, D. M., Lee, K.S., J. & D. Acosta in 2008 as Sense of Community Index.

Building a brand community online

Millions of people spend time on social networks daily, where they consume and generate content. In addition, social media can reach more people by increasing the sphere of influence and understanding better the customers. Social networks can help in gaining confidence because they represent an opportunity for fans to promote the products. When you praise someone, you gain trust of people more easily. Social media has thus become the most powerful promotional channel of all times. Businesses have become increasingly aware of this and allocate increasing budgets for social networks in order to target the consumers [17].

Online brand communities represent a very different environment from the rest of promotion channels, they are based on an interaction of giving something and getting something. Starting from the existing customers, they use calls-to-action and discounts to convince them to connect, then pass to special events, contests, exclusive offers fun content or even face to face meetings. Social media offers a lot of opportunities, but like any environment of digital space it requires a strategy. For example, it is very important to determine which networks are suitable for a particular brand, to identify where to focus. Large networks like Facebook, Twitter, Instagram, Google Plus and LinkedIn have very large audiences, which means that their

existing and future customers certainly spend time in these virtual spaces. Thus presence on these social networks is imperative for brands in order to get in touch with them.

Besides large networks, there are niche networks focused on specific topics and audiences. The people here are passionate about those subjects and seeking a detailed content: TripAdvisor for travel reviews, OpenTable for restaurant reviews. There are many social networks specialized in different industries, they have a smaller number of members, but they are the most important for a particular brand.

In building a community it must be taken into account the purpose and the social network. Some social networks are used for personal relationships, others are focused on content distribution and others are used for networking and business. Each of them is attractive for brands as people discuss products and services all the time. But context is important, so posts must be simple, interesting and useful; sale messages are not recommended. In distributing content, social networks offer to a lot of potential customers' information such as statistics, case studies, infographics, reviews and more. Those for business attract people looking for business contacts, jobs and employment. It is very important to understand the role of each social networking and the objectives of the people who are there.

One last thing that is required to be planned is how to communicate with each audience in social networks belonging to the brand. The tone of voice should be adapted to the specific network and the type of interaction monitored: professional sound voice, authoritative when the audience consists of people of formal and professionals such as LinkedIn or spiritual and playful where customers are more relaxed and come from a more personal social network. A generous and welcoming tone attract more new people and existing customers enjoy appreciation from the brand. By profile page, brands can deliver news and have conversations with their audience. These social media profiles are indexed by search engines. If the content has quality there are more chances for the social pages to appear in the search results. Hence, the probability of reaching the public is much higher and the chances of attracting new customers may increase.

Building a presence in social media takes time. Posting original and interesting content leads to more visibility. Accelerating the process is possible through paid promotion posts which helps to reach a wider audience. This is how social media advertising works: it allows a very specific targeting and the ability to quickly increase visibility. Measuring the impact of a campaign on social networks is not complicated by web analytics tools and social media management. It is possible to achieve results such as: the number of people who have established links, the trend of activities, the most interactive posts, the number of votes, who are fans of the brand, how they assimilate the content and interact with it.

Social networks are important tools, but also can cause some problems to businesses, such as: the possibility of bored audience unless attractive and quality content is offered, automatic irrelevant content posting, engaging in too many activities or actions.

Conclusions

In conclusion Social media is part of people's lives and it is a great opportunity for brands. Social networks bring people together to interact and share information. They have become indispensable very fast.

When building online communities, social networks should be decided in order to be suitable for the brand, where customers can find the brand, which of the following networks customers spend time on: Facebook, YouTube, Pinterest, Twitter, Google Plus, LinkedIn. One or a combination of networks depending on brand strategy can be chosen. Once you create your account on a social network, it is time to know your "neighbors". Building relationships within community takes time. But if it helps to spread the news about your business and it is an investment that it is worth.

For a brand, community must be like a marketing team; it helps to create and promote content for the audience. It is not enough to communicate with community members; there must be organized activities for them to have the opportunity to know one another. Each community member must feel that they belong to a group.

Brand communities have become connection between the consumer and the marketer, this fact has a considerable influence in developing brand loyalty [15].

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МАРКЕТИНГ МІРКУВАНЬ ДЛЯ БРЕНД-СПІЛЬНОТ

Більшість споживачів витрачають значну частину свого вільного часу на пошук інформації в Інтернеті про бренди, перш ніж приймати рішення про покупку. Інтернет є основним фактором, який призвів до значного збільшення часу, відведеного споживачами для пошуку і порівняння інформації про марки, як крок, що передує рішенню про покупку, а також одним з найбільш важливих факторів, що впливає на взаємодію між брендом і споживачем.

Хоча загальна тенденція така, що спільноти стають більш активними і більш залученими до вибору марки, відповіді споживача на їх повідомлення, очевидно, залежать від культурних, соціальних і економічних чинників. Робота має на меті з'ясувати, що означає бренд-спільнота, і як виявилося, – якщо вони дійсно були побудовані з нуля, або вже існували в латентному стані, і лише чекали на визнання – то які характеристики успішних спільнот, які з цілей брендів можуть бути досягнуті за допомогою цих груп, яка роль соціальних медіа в розвитку цих спільнот, якого типу елементи, ймовірно, можуть виникнути всередині онлайнових співтовариств і яка їхня частка, які є дослідницькі методики, що можуть надати підтримку компаніям в моніторингу цих груп.

Ключові слова: цифрова стратегія, соціальні медіа, інтернет-спільноти бренду.

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МАРКЕТИНГ СООБРАЖЕНИЙ ДЛЯ БРЕНД-СООБЩЕСТВ

Большинство потребителей тратят значительную часть своего свободного времени на поиск информации в Интернете о брендах, прежде чем принимать решение о покупке. Интернет является основным фактором, который привел к значительному увеличению времени, отведенного потребителями для поиска и сравнения информации о марках, как шаг, предшествующий решению о покупке, а также один из самых важных факторов, влияющих на взаимодействие между брендом и потребителем.

Хотя общая тенденция такова, что сообщества становятся более активными и более вовлеченными к выбору марки, ответы потребителя на их сообщения, очевидно, зависят от культурных, социальных и экономических факторов. Работа имеет целью выяснить, что означает бренд-сообщество, и как оказалось, – если они действительно были построены с нуля, или уже существовали в латентном состоянии, и только ждали признания – то какие характеристики успешных сообществ, которые из целей брендов могут быть достигнуты с помощью этих групп, какова роль социальных медиа в развитии этих сообществ, какого типа элементы, вероятно, могут возникнуть внутри онлайновых сообществ и какова их доля, какие существуют исследовательские методики, которые могут оказать поддержку компаниям в мониторинге этих групп.

Ключевые слова: цифровая стратегия, социальные медиа, интернет-сообщества бренда.

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SAMPLING IN EXTERNAL AUDIT – THE MONETARY UNIT SAMPLING METHOD

This article approaches the general issue of diminishing the evidence investigation space in audit activities, by means of sampling techniques, given that in the instance of a significant data volume an exhaustive examination of the assessed population is not possible and/or effective. The general perspective of the presentation involves dealing with sampling risk, in essence, the risk that a selected sample may not be representative for the overall population, in correlation with the audit risk model and with the component parts of this model (inherent risk, control risk and non detection risk) and highlights the inter-conditionings between these two models.

Key words: statistical selection models, non-statistical selection models, population, sampling unit, sampling risk, non- sampling.

Introduction

Auditors need to collect competent, relevant and reasonable audit evidence, in order to ground their opinion. In the instance of a significant data volume, it is not possible or effective to exhaustively examine the population to be assessed. In such instances, the investigation space is reduced through sampling techniques. Sampling in audit allows auditors to enforce audit procedures only on the items selected in the sample and to extend the resulting conclusion to the overall population of the economic operations under consideration.

Tests are conducted by examining documents and implementing audit procedures which would lead to conclusions drafting based on them. The population making up a category of economic operations may be represented by assets or invoices lists, centralised situations of the creditor or debtor and other similar ones.

The size of the sample depends on the sampling risk accepted by the auditor, the selection of adequate methods, in relation to the actual situation, representing a decision which contributes to sampling risk minimization; the selection method is chosen based on the auditor's professional judgement.

The article introduces an overall logical scheme of the selection process, based on which a succinct review is made – but dealing with all theoretical and practical interest items – the two important classes of selection methods: statistical methods (various types of selection: MUS, systematic, stratified, multi- level, random selection), as well as non statistical methods (judgemental selection, block selection).

The statistical selection methods use the probability theory and statistical formula to set the sample size, including to consider and to assess the sampling risk, making it possible to obtain conclusions valid for the overall population.

The non statistical selection methods offer rough results, which may not be extrapolated so as to be representative for the overall population, due to the selection process nature, which does not offer each element of the population equal selection chance.

The article further completes the theoretical, formal information (procedures, computation formula, selection of values for parameters) with specific calculation examples, analysed in detail for the MUS (Monetary Unit Sampling) method.

The final part of the article approaches two issues which close the series of options and procedures dealt with in the first two sections, respectively the results validation and errors interpretation and processing in the sampling process.

The article closes with a generic synthetic conclusions chapter (in the guise of recommendations), which define the main formal-procedural horizon and coordinates, which are decision grounding for the auditor involved in audit missions using sampling techniques.

Population, sample, sampling, sampling risk

In audit, the investigated and assessed population (records, lists, inventories etc.) as a rule, are very large in size, which makes an exhaustive inventory or enumeration of all values at the level of the population devoid of practical interest or even impossible.

A data sample is, in statistics and quantitative research methodology, a set of data collected and/or selected from a statistical population, through a defined procedure [1].

The sample is, as a rule, a sub-set reduced in size, easy to manage, of the source population. The samples are selected according to certain criteria and/or rules, while statistical processing is made on samples, so that inferences or extrapolations can be made, starting from a population sample. If the sample was adequately selected, then the conclusions resulting from the tests and processing of such (valid, obviously, within the sample) can be extended to the overall population, practically becoming the conclusions of the audit.

Sampling involves several stages[1]:

(1) Definition of the target population;

(2) Provision of a sampling framework, a set of items or events which can be measured;

(3) Provision of a sampling method to select the items or events within the sample;

(4) Setting the sample size;

(5) Implementing the sampling plan;

(6) Data sampling and collection;

(7) Data which can be selected.

The individual items of which a population is made are called sampling units. Sampling units can be physical items (for example: taking-over notes, individual store or account files, payment orders, receipts, invoices, contracts) or monetary units etc. The items of a population shall have equal chances to be selected in the sample to be tested.

The selected sample shall be representative and contain a sufficient number of items in order to make it possible to draft realistic conclusions on the overall audited economic operations categories. In this respect, auditors shall consider the characteristics of component items of the population from which the sample is extracted, so that they are as level as possible.

In order that the population of an economic operations category may candidate to the selection of a sample from its own set, it needs to fulfil the following two conditions (cumulatively):

a) to be adequate to the objective of the financial audit mission;

b) to be exhaustive, which involves including all relevant items pertaining to the period for which the selection is made in the respective category of economic operations.

Auditors need to consider sampling risk, the acceptable errors volume and the degree to which errors are anticipated when setting the sample size.

Sampling risk refers to the possibility that a selected sample be not representative for the overall population and

it is correlated with the audit risk model and its component parts (inherent risk, control risk and non detection risk).

The size of the sample is influenced by the sample risk accepted by the auditor. Choosing adequate selection methods contributes to the reduction of the sampling risk. In case the sampling risk is overestimated, this may lead to the conduct of a too large number of detailed tests, and when it is underestimated, this may lead to the establishment of an incorrect audit opinion, due to the selection of a sample which is not representative.

Consequently, the sampling risk involves the risk that when applying an audit procedure on a sample, the conclusion of the auditor be different from the conclusion that would have been reached in case the overall population had been subject to the same audit procedure.

Sampling risk may lead to two error generating types of conclusions:

I. in the instance of a controls test, the conclusion according to which controls are more effective than they actually are, and in the instance of the detail tests, the conclusion that there is no significant deviation, when this deviation exists in fact.

II. In the instance of a controls test, the conclusion according to which controls are less effective than they actually are, and in the instance of a detail test, the conclusion that there exists a significant distortion, when this distortion does not exist in fact.

Sampling risk is a component part of non detection risk. Another element of the non detection risk is the non sampling risk, respectively the possibility that auditors reach an erroneous conclusion from any reason which is not related to the sample size (for example, auditors do not recognize an error because of having used inadequate audit procedures or may erroneously interpret the evidence, most of audit evidence being more exhaustive than conclusive).

Sample selection methods

The selection of the items to be part of the sample is conducted through statistical methods or through non statistical ones. Choosing the selection method, a process illustrated in Figure 1, is done based on the auditors' professional judgement.

The decision on whether a statistical or a non statistical method should be used to select the sample is up to auditors' professional judgement. Irrespective of the selection method chosen, auditors need to consider that the overall population pertaining to the economic operations categories to be tested should fulfil the following criteria:

a) Be characteristic to the objective pursued;

b) Be exhaustive, that is include all relevant items pertaining to the audited period.

When conducting sampling, auditors need to assess the risk level, the most probable error, the precision, and most important of all, materiality. Furthermore, they need to consider the nature of the population to be tested and to establish the adequate sampling methods.

Auditors need to also establish the highest value transactions within the population and decide whether these transactions can be audited separately.

To reduce sampling risk, to simplify the selection of the items in the sample, to level population, but also to make a more detailed analysis of the population of an economic operations category, auditors may opt for stratification and division in distinct sub-categories, based on the categories which define them (for example, division of the category "revenue" in sub-categories, according to their respective types: fiscal revenue, non fiscal revenue, equity revenues etc.).

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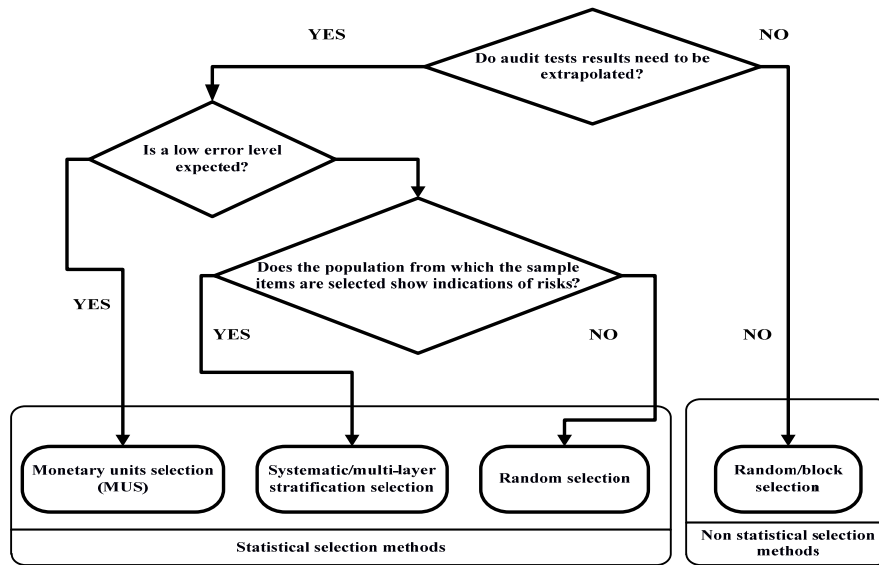
Fig. 1. Choosing the method to select the items which shall make the sample

2.1 Statistical selection methods

The statistical selection methods use probabilities theory and statistical formula to establish sampling size, including for the assessment and consideration of sampling risk, making it possible to reach valid conclusions for the overall population.

The sampling statistical selection methods are as follows: (a) the monetary units selection (MUS); (b) the systematic selection; (c) the stratified selection; (d) the multi-stage selection, and (e) the random selection.

(a) Selection based on monetary units (MUS). MUS is a method to select the items which are to be tested.

(b) Systematic selection. This is a method in which the number of sampling units (items) in the population is divided by the sample size, in order to obtain a sampling interval, and after setting a randomly generated starting point, each N-th unit is selected. Systematic selection is applied when it is necessary that the sample spreads across the population, while values do not fluctuate much.

(c) Stratified selection. This is a method in which selection is based on the population being sub-divided into homogeneous groups. Groups may be set according to various criteria: transaction sizes (high or low values) or audit risk (high or low risk). After the population has been divided into groups, simple random sampling may be used to extract items from each group.

(d) Multi-stage selection. This selection method is used as a general rule when economic operations are unfold in different locations, which are too numerous to be exhaustively visited, while the items to be tested are found in these locations.

(e) Random selection. The selection supposes computation of the sample size by using a random number generator.

Non statistical selection methods

Non statistical selection methods offer rough results, which cannot be extrapolated to be representative for the population in its entirety, given the selection process nature, which does not offer each item in the population equal selection chances. Here are the non statistical selection methods: (a) judgemental selection; (b) block selection.

Monetary Units Selection Method (MUS)
MUS Selection Procedure

MUS is a method to select the items to be tested in relation to their monetary value, in which size, selection and assessment of the sample result in a conclusion expressed in monetary values. A benefit of this selection method is that auditor's effort is directed towards higher value items, since there is a higher probability that they be selected and may lead to smaller sample sizes.

The decision to choose this method is based on auditors' expectation that the population contains a reduced error level, while the method may be successfully used only if this assumption is valid.

The issues which the auditor needs to establish when sampling are: population size, confidence level, margin of error, precision, high values and specific items, extrapolated errors higher ceiling, error percent.

Example: *Let's assume that we have a population made of 6 items, of which 2 items need to be selected. The values of the 6 items are 60, 220, 340, 470, 620 and 1030. In the instance random sampling is used to select the 2 items, all items have equal selection chances. On the other hand, in case the MUS method is used, then the overall value of the 6 items shall be 2740 and to select the 2 items we need to calculate de sampling interval as follows: 2740/2 =1370. This means that the population will be divided into two cells of 1370 monetary units each, out of which 1 item shall be selected. In such cases, the chances that a 1030 monetary units item be selected are 10 times higher than that of 60 units item. Thus MUS has a predilection for high value monetary units.*

(a) Population size – is the value of the overall data set from which the sample shall be selected and on which the auditor wants to conclude.

(b) Confidence coefficient – the coefficient values were calculated based on the probability theory, the values of which are:

0,7	2	3

The coefficients of the confidence factor determine the size of the sample and implicitly the spread of the detail tests, so as to provide a 95% reasonable assurance that financial statements are free of significant deviations. The risk coefficient is selected by intersecting the inherent risk set level and the control risk in the risk matrix (Table 1).

Table 1. Selecting the risk factor from the risk matrix

		CONTROL RISK		
		HIGH	**AVERAGE**	**LOW**
INHERENT risk	**HIGH**	Risk factor **3**	Risk factor **3**	Risk factor **2**
	AVERAGE	Risk factor **3**	Risk factor **2**	Risk factor **0,7**
	LOW	Risk factor **2**	Risk factor **0,7**	Risk factor **0,7**

Source: The project – Financial and Audit Manual, The Romanian Court of Accounts

A step further is the identification of the relation among the level of confidence in the internal control system, the confidence factor and the way this impacts on the sample size (Table 2).

Table 2. Relationships between the level of confidence in internal control systems,
the confidence factor and the sample size

Level of confidence in the internal control system	*HIGH*	*AVERAGE*	*LOW*
Confidence factor	0,7	2	3
The way in which the sample size is impacted and implicitly detail tests spread	**Low** Size and spread	**Average** Size and spread	**High** Size and spread

Source: The project – Financial and Audit Manual, The Romanian Court of Accounts

The error initially estimated in the population will be based on the previous experience and will lead to the establishment of the sample size in relation to the expected error level: low or high and a corresponding percent of 10% or 20%, according to this formula:

$$Ees = Pr\ sem \times (10\ or\ 20)\ \%\qquad(1)$$

where: Ees – assessed error, and Pr sem – materiality threshold.

After detail tests have been performed, the identified errors shall be extrapolated and compared with the initially estimated error level and with the materiality threshold, to conclude on the overall population.

Precision is the accuracy with which auditors plan to attain the estimated error. This is, as a general rule, set at a value between 80% and 90% of the balance between the materiality threshold and the estimated error. Precision grants obtaining sufficient evidence to support audit opinion. In case the plan was really efficient, the higher errors ceilings shall be equal to the materiality threshold.

Precision planning is meant to provide a buffer to allow for a small manoeuvre margin, in case unforeseen errors are identified.

Precision value is calculated based on the following formula:

$$Vpr = (Pr\ sem - Ees) \times (80\ or\ 90)\ \%\ prec\qquad(2)$$

where: Vpr – precision as a value; Pr sem – materiality threshold; Ees – estimated error; % prec – precision percent.

High values and specific items. Auditors may decide to 100% test the items exceeding a certain monetary value. For example, auditors may decide to test all the items exceeding the value of 100,000 lei in the above mentioned example. Similarly, based on the professional judgement, auditors may consider that certain items, given their nature, are prone to specific risks. These are called specific items. For example, in case auditors consider that the controls pertaining to a certain category of economic operations or existing in a certain department are ineffective, they may treat them as specific items and decide to verify them in their entirety.

In order to level the population from which the sample will be extracted, all high value and specific items are separated from the population they belong to, in order to be tested 100%.

Given the fact that these items are separated from the remaining population from which the sample is to be extracted, but also the fact that all of them are to be examined (100%), the possibly identified errors may not be extrapolated to the population they come from, because it will no longer contains such errors, these shall only be added to the errors found in the sample.

Upper ceiling of extrapolated errors. This is the maximum possible error estimated in the population, resulting from detail testing of the sample.

In case extrapolated errors exceed the materiality threshold, auditors shall extend the substantive testing in order to check for significant errors and draw a conclusion there upon.

The error rate. The percentage error (% pr) is constant in monetary terms, in relation to an item in the sample.

For example, the value of 11,000 is recorded in the client account receivable "x" in the verification balance, but actually auditors found that the entry should have been 1,100. There results a balance from the overestimation of 11,000 – 1,100 = 9,900 and the error percent (%pr) of the item is 2,000/10,000 = 10%.

Here are the MUS method selection benefits:

1. as a rule, it generates smaller samples than other sampling methods;

2. it does not involve difficulties in expressing a conclusion in monetary terms;

3. it is not necessary to conduct a previous monetary unit stratification, given that it is going to be conducted automatically, thus avoiding issues related to establishing the optimal size of the strata;

4. it is relatively easy to apply, as compared to other sampling methods;

5. high value errors detection problem is taken care of, given that high value items have higher chances to be selected in the sample.

Here are the main limitations of the MUS method:

1. the sampling units the values or balances of which are zero have minimum chances to be selected in the sample;

2. the more underestimated an element is, the less chances there are for it to be selected in the sample;

3. it is very difficult to use the MUS method in an environment which does not use IT;

4. MUS sampling is more time consuming than other samplingbmethods, given that normally sampling units exist in a much higher number than physical items (invoices, payment orders, cheques, contracts etc.).

Here are the steps involved in sample size calculation and sample selection based on the MUS method:

Step 1 – setting the sample size;

Step 2 – selecting the items which will make up the sample and which will be subject to detail testing;

Step 3 – detail testing.

Short descriptions of these procedural steps are given below.

Step 1 – Setting the sample size.

The sample size is calculated using the following formula:

$$Des = (Vpop \times Fi) / Vpr \qquad (3)$$

where: Des – sample size; Vpop – population value – represents the value of the overall data set; Fi – confidence factor – is a coefficient calculated based on the theory of probabilities and selected from the risk matrix; Vpr – precision: represents the accuracy with which the auditor plans to attain the estimated error.

Example. Setting the sample size:
- Population value (Vpop) = 400,000,000 lei
- Materiality threshold (Pr sem) = 400,000,000 x 2% = 8,000,000 lei
- Confidence factor (Fî) = 3
- Estimated error (Ees)= 8,000,000 x 10% = 800,000 lei
- Precision value (Vpr) = (8,000,000 – 800,000) x 90% = 7,200,000 x 90% = 6,480,000 lei
- Sample size (Des) = (400,000,000 x 3)/6,480,000 = 185 item cells
- Sample interval (Ies) = 400,000,000/185 = 2,162,162 lei

Step 2 – Selecting the items which will make up the sample and which will be subject to detail testing.

Sample selection is conducted by dividing the overall value of the population by the size of the sample required to obtain a sampling interval (Ies). Thus, the population is divided by the average interval in cells, the component items of which shall have the value of 2,162,162 lei. An item is then selected at random from each cell. In order that this method operates, all high value items, those exceeding the average sampling interval, need to be removed from the population and tested separately – that is 100%.

In the example below (see Figure 2) we have a population with an overall value of 400,000,000 lei. The population is divided by means of the sampling interval (2,162,162) into 185 items cells and one item of each cell is extracted at random to be part of the sample.
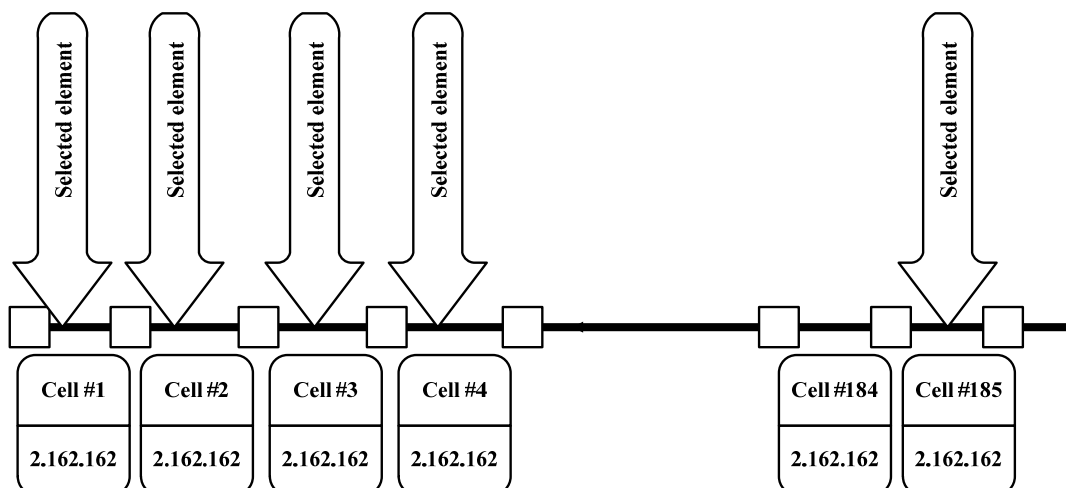

Fig. 2. Selection of the items that shall make up the sample and which shall be detail tested

Source: [9]

To gain additional assurance, the auditor shall always see to it that the minimum sample size is not under 30 items and to extend by 25% the samples exceeding this dimension.

Step 3 – Detail testing.

Auditors shall detail test the items selected in the sample, in order to make sure that recordings of certain operations have not been omitted (exhaustiveness); fictitious or double recordings have not been included (emergence); correct amounts have been allotted to the operations or recordings (assessment and allotment); the operations are reflected in recordings in the corresponding period (closing date); the operations are recorded in the correct accounts and if applicable, in the corresponding analytical accounts (classification); all calculations are correct (accuracy); the totals of the analytical balances are correctly taken over in the synthetic account and are reflected in the totals of the accounting record books

(classification and understanding degree) and economic operations are in keeping with law and regulations applicable to the economic entity (legality).

Assessment of MUS method selected samples testing results

MUS based sampling is used, as a general rule, in the audits aiming at testing a numerous series of operations, with a low value and, in general, in the instance of homogeneous operations involving a reduced error assessed risk.

MUS sampling method is based on certain monetary units, considered individually. The auditor needs to establish the measure in which each sampled item is erroneous, then to extrapolate the error to the overall sampling interval in the respective transaction category.

Table 3 provides an example of the way this type of error is calculated.

Table 3. MUS sampling – Extrapolation of the error

Example. A sample was extracted based on the MUS method meant to test the expenses involved by the operation of entity X. The sampling interval (Ieș) was set at 250,000 lei. The item identified in view of testing is an invoice. When the invoice is examined, it is found that the invoiced amount was exchanged at an incorrect rate of exchange and was recorded in the accounting record book at the value of 2,560 lei instead of 2,650 lei, respectively, underestimated by 90 lei.

Item in the sample erroneously recorded	(a) Recorded value	(b) Audited value	(c) Error (a-b)	(d) Misrepresentation (c/a)	(e) Designed error (d x Ieș)	(f) Audited entity adjustment
Invoice 0002	2,560 lei	2,680 lei	- 90 lei	0.035156 %	- 8.789 lei	0 lei
Total	2,560 lei	2,650 lei	- 90 lei	0.035156 %	- 8.789 lei	0 lei

Notes
(1). Column (c) calculates the balance between the audited value and the recorded value and it results that this is 2,560 – 2,650 = – 90 lei (UNDERESTIMATION)
(2). Column (d) calculated how much it is in percent the error in the recorded value, that is 90/2,560 = 0.035156
(3). Column (e) the error percent is multiplied by the sampling interval (Ieș) 250,000 lei since it is considered that the tested item is representative (it contains a systematic error) and it is supposed that it shall occur again with the same frequency along all the interval and there results the extrapolated error 0.035156 x 250,000 = 8,789 lei.

Source: The Financial and Audit Manual (working draft), The Romanian Court of Accounts (2015)

Errors interpretation and processing
Errors balancing

In each operation category, auditors compare overestimation and underestimation to obtain the estimated error within the category of operations. Significant overestimations or underestimations may exist, and despite of this the financial statements be correct from a material point of view. Nevertheless, if a high error percent (%) is found, the auditor may review the original assessment of the risk level set in the planning stage. This review may lead to the increase of the risk factor, a situation in which the auditor shall make use of additional testing. Mention shall be made that, in this instance, the auditor may include in the report comments relating tu the high level of error percent (%).

Error limiting

When monetary errors or internal control system deviations are found, it shall be seen whether the errors are limited in character.

As a first investigation option, auditors need to clarify whether certain errors emerge only in special instances. Special instances could include, for example, special types of operations which are authorised by a certain person. If it is certain that a certain type of error occurs only in special instances, then the respective error should not be extrapolated to the overall population from which the sample has been selected, but only the under-population made of the operations conducted in "special instances".

Establishing the materiality of errors and irregularities level.

Auditors shall establish whether there are material errors or irregularities, both at the level of operations categories, and at the level of the overall financial statements. Furthermore, auditors shall assess the impact of possible shortcomings of audit evidence. For example, in case auditors could not obtain audit evidence that would ground the amounts listed in the financial statements or could not follow an audit trail, they shall quantify the impact of these shortcomings in the audit evidence, considering that these limit the audit opinion sphere.

The materiality threshold offers a comparison basis in relation to which auditors should establish the global level of errors or irregularities in financial statements, since they are so material that:

Financial statements do not offer a realistic and reliable image or they are not adequately presented;

the operations recorded in the financial statements of the entities do not comply with the intentions of the Parliament or with those of the authorities governing them.

When auditors compare the global error with the level of the materiality threshold, they also need to consider quality factors referring to specific circumstances of the audited entity activity.

Establishing the existence of material errors in financial statements.

To assess the level of the errors in financial statements it is necessary that the following requirements are met:

all planned samples have been extracted;

the sample sizes resulted following auditors' reasonable assessment and are based on a full understanding of the audited entity and also on risk assessment;

the assessments have been reviewed all along the audit process, also considering other reasonable information.

Mention shall be made that the error level in the population is made of two parts: (a) the error which auditors find following testing and (b) the non detection margin/percent of the auditor, which may show that the non detected error could be bigger or smaller than the assumed one, as follows:

A higher assurance obtained by the auditor following performance of substantive testing, on the operation in the sample, supposes a higher non detected error level. On the other hand, a higher assurance, obtained following control testing or following analytical procedures enforcement, generates a lower level of undetected error. This is possible because both control testing and analytical procedures provide an assurance level which refers to the overall population.

Auditors may consider a higher level of undetected error for entities prone to risk.

If auditors initially estimated a high level of the error, but finds subsequent to direct substantive testing a lower level, then they shall consider reducing the level of the undetected error level.

Documentation

Auditors shall take down audit tests results for each category of economic operations, including to document the fact that they considered all quality factors when implementing professional judgement.

Conclusions

Choosing the method to select the representative sample depends on auditors' professional judgement and on the aim pursued, on the uniformity of the population and on the risk they are willing to undertake. Furthermore, auditors shall assess the results of the tests on the sample, to clarify with the auditee management the nature of the identified misrepresentations and to decide whether the conclusion reached may be extended to the overall population or it is necessary to extend the sample in order to diminish the sampling risk.

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ВИБІРКА В ЗОВНІШНЬОМУ АУДИТІ – МЕТОД ВИБІРКИ НА БАЗІ ГРОШОВОЇ ОДИНИЦІ

У даній статті розглядає загальне питання зменшення досліджень в аудиторській діяльності, за допомогою техніки вибіркових досліджень, з огляду на те, що в разі, значного обсягу даних, вичерпний аналіз оцінки населення не представляється можливим і / або ефективним. Загальна перспектива презентації говорить про ризик вибірки, по суті, ризик того, що обраний зразок не може бути репрезентативним для населення в цілому, про кореляції з моделлю ризику аудиту, а також про складові частини цієї моделі (властивий ризик, контрольований ризик і ризик не виявлення) і висуває на перший план внутриобумовленність між цими двома моделями.

Ключові слова: статистичні моделі вибору, нестатистичні моделі вибору, населення, одиниця вибірки, ризик вибірки, невиборність.

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ВЫБОРКА ВО ВНЕШНЕМ АУДИТЕ – МЕТОД ВЫБОРКИ НА БАЗЕ ДЕНЕЖНОЙ ЕДИНИЦЫ

В данной статье рассматривается общий вопрос уменьшения исследований в аудиторской деятельности, с помощью техники выборочных исследований, учитывая то, что в случае, значительного объема данных, исчерпывающий анализ оценки населения не представляется возможным и / или эффективным. Общая перспектива презентации говорит о риске выборки, по сути, риск того, что выбранный образец не может быть репрезентативным для населения в целом, о корреляции с моделью риска аудита, а также о составных частях этой модели (неотъемлемый риск, контролируемый риск и риск выявления) и выдвигает на первый план внутриобусловленность между этими двумя моделями.

Ключевые слова: статистические модели выбора, нестатистические модели выбора, население, единица выборки, риск выборки, невіборность.

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EMOTION BASED ANALYSIS OF TURKISH CUSTOMER OPINIONS

Firms should manage their customer feedback so they can adapt to rapid changes in the environment. They have to interact with their customers to understand them and to turn their opinions into useful knowledge. Understanding customers' feelings about a product gives firmS competitive advantage through continuous market monitoring. They can thus generate improving strategies about the system to change perceptions that drive the behaviours of the customers. Firms can view their customers' happiness as a key tool for decision-making. This study calculates online product happiness by using the average emotional valence values of customer opinions.

We analyse Turkish opinions about a product over a period of 3 months. We find the averages of the online emotional valence values of the product per month. We also determined the increase in happiness over time. According to the opinion valence values, we found the relations between the documents.

Keywords: opinion mining, emotional analysis, happiness, natural language processing, text mining.

Introduction.

Happiness is one of the most important issues in life. Happy citizens bring a positive force to the economy. It is known that behaving optimistically is good for the economy [14]. Likewise, it is a known fact that a happy workforce gives a company a huge competitive advantage in the modern economy. Happy customers give power to a firm. Therefore, it is really important to manage the happiness issue. For this, we first have to measure happiness. How can we manage happiness if we can't measure it?

It is hard to measure emotional feelings, especially if they are collected from social networks. Firms should understand their customers' emotional feelings, including happiness; if not, they won't be able to manage it in order to change the behaviours that they want to change. In addition, the emotions of online customers have a direct effect on what they will do next. Customer feelings also have an important role in adaptation. Firms need to know the real feelings of customers about their products. It is valuable for a firm to know how happy their customers are with their product for the purpose of customer satisfaction.

Happiness is one of the most difficult interdisciplinary research areas. It has also attracted the attention of the world of marketing and consumption. The underlying principle of so-called "happy consumption" and "happy products" is not just a new form of hedonism but it can bring a tangible quality and innovation to product making by using happiness as a new research approach [4]. The subjects of happiness and well-being have been studied for a long time in psychology [19, 27, 28, 29], in behavioural economics [12], and in economics [9]. Frey and Stutzer [9] examined the literature on happiness and subjective well-being in economics. In addition, they initiated the economic analysis of happiness. Jalloh et al. [11] reviewed the literature on happiness relating to the common constructs used to define and explain the concept of happiness, including the most common scales and instruments utilised to measure this concept. They also aimed to explain the definition and measurement of happiness.

Most researchers have measured happiness by means of questioning. Some of the scales used to measure happiness can be given as follows: the Single-Item Measurement of Happiness [1]; the Subjective Happiness Scale [15]; the Satisfaction with Life Scale (SWLS) [5]; the Oxford Happiness Questionnaire [10]; and Bhutan's Gross National Happiness Index [26]. They are usually based on a *limited number* of participants. Complementing these techniques, *participation in the crowd brings together the wisdom of the crowd* [24]. In recent years, large-scale texts have been used in the subject of happiness to overcome the limited small sample size problem due to costs.

The subject of social media has long been studied [20, 22, 23]. Mostafa [18] mined customer emotional data on social media. He used a random sample of 3516 tweets to evaluate consumers' sentiment towards well-known brands such as Nokia, T-Mobile, IBM, KLM and DHL. He used an expert-predefined lexicon including around 6800 seed adjectives with known orientation to conduct the analysis. Yassine and Hajj [30] aimed to extract the emotional content of texts in online social networks. They focused a whether the text is an expression of the writer's emotions or not. They presented a new perspective for studying friendship relations and emotions' expression in online social networks which deals with the nature of these sites and the nature of the language used. Brew et al. [3] described a companion system which is based on Twitter that maintains a happiness index for nine US cities to identify the underlying causes behind shifts in sentiment. They showed that sentiment scoring methods are susceptible to unexpected shifts due to noise and trending memes. You, DesArmo and Joo [31] described a methodology to numerically represent the happiness of a city by mining user generated terms in Flickr.com. They collected 15,000 text records consisting of titles, tags, descriptions, and comments for the thirty most populous cities in the United States. They calculated happiness scores (H-Score) by matching text extracted from Flickr.com with a happiness index dictionary. Kamvar and Harris [13] presented the "We Feel Fine" project that collected the world's emotions to help people better understand themselves and others. Since August 2005, "We Feel Fine" has been harvesting data on human feelings from a large number of weblogs. Every few minutes, the system searches the world's newly posted blog entries for occurrences of the phrases "I feel" and "I am feeling". They use both a qualitative and statistical exploration of other people's emotions.

Mogilner et al. [17] also examined 12 million personal blogs containing the phrase "I feel" They aimed to capture the meaning of happiness by examining emotions that co-occurred with feeling "happy". They determined the ages of 4,462,053 of the authors through their public profiles. Of those, 3,049,866 expressed identifiable emotions (sentences of the form "I feel like going to the store" were excluded), 70,153 of which were "happy." A total of 6,302 of these sentences expressed feeling happy as well as other emotions. They use Affective Norms for English Words (ANEW), which was developed to provide a set of

normative emotional ratings for a large number of words in the English language, in order to provide standardised materials that are available to researchers in the study of emotion and attention [2]. Dodds and Danforth [6] are the directors of the Computational Story Lab group of applied mathematicians working on large-scale, system-level problems in many fields including sociology, nonlinear dynamics, networks, ecology, and physics at the University of Vermont with the Vermont Complex Systems Centre and Vermont Advanced Computing Core. The Computational Story Lab has built a hedonometer which is an instrument to "remotely-sense" emotional states and levels, in real time. Dodds and Danforth [6] quantified happiness levels on a continuous scale for a diverse set of large-scale texts: song titles and lyrics, weblogs, and State of Union addresses. Their method, which can be seen as a form of sociotechnical data mining, was based on large-scale texts to use human evaluations of the emotional content of individual words within a given text to generate an overall score for that text. They use the ANEW dictionary. They also used the labMT 1.0 dictionary, which was developed by using the crowdsourcing power of Amazon's Mechanical Turk. Dodds et al. [7] present evidence of a deep imprint of human sociality in language, observing that (i) the words of natural human language possess a universal positivity bias, (ii) the estimated emotional content of words is consistent between languages under translation, and (iii) this positivity bias is strongly independent of frequency of word use, using human evaluation of 100,000 words spread across 24 corpora in 10 languages which are diverse in origin and culture.

From the perspective of felt human experiences rather than at neurological or descriptive levels, it seems that there are two fundamental dimensions rather than a range of differing kinds of emotions [8, p.120]. First, the valence of an experienced emotion is the degree to which it is strongly positive or negative. Second, the level of arousal felt is the amount of energy perceived (e.g., from lethargic to hyperactive). This assertion apparently contradicts the neurological evidence mentioned earlier of at least five emotions and the linguistic evidence in the form of the existence of a wide range of nonsynonymous terms for emotions. Nevertheless, research has shown that people describing the same traumatic event may use a wide range of different emotional terms (e.g., sad, angry, upset) almost indiscriminately and that the two dimensions of valence and arousal seem to be the key underlying factors. A consequence of this is that identifying valence and arousal is likely to be far easier and more reliable than identifying other types of emotion detection [25]. In this research, we use words' emotional valences to calculate the online product happiness. The aim of the study is to understand customer feelings by calculating an average happiness score about a product. We translated ANEW [2] into Turkish to use the average emotional valences which are in the ANEW dictionary. We calculate the average happiness scores for documents.

We have organised the paper as follows. We present the methodology of the research and the research results in the next section. We draw the conclusions and give our plans for further research in last section.

Methodology

Each of the customer opinions, which are large, noisy, and dynamic, is formed of web pages. Customers' online opinions are collected automatically from the web URLs with web TM techniques. We collected 380 Turkish free-text formed feedback about an international electronic trade mark's product over a period of three months from 01.12.2015 to 01.03.2016. The online opinions are converted to documents, which then become ready for clustering by applying natural processing techniques (NLPs). The word vector, which is a numeric matrix [21], is extracted after applying NLP techniques.

Term frequency and occurrences are used in processing the documents. To each term in a document we assign a *weight* for that term that depends on the number of occurrences of the term in the document. For example, we would like to compute a score between a query term t and a document d, based on the weight of t in d. The simplest approach is to assign the weight so that it is equal to the number of occurrences of term t in document d. This weighting scheme is referred to as *term frequency* and is denoted by $tf_{t,d}$, with the subscripts denoting the term and the document in order. For a document d, the set of weights determined by the *tf* weights above (or indeed any weighting function that maps the number of occurrences of t in d to a positive real value) may be viewed as a quantitative digest of that document. In this view of a document, known in the literature as the *bag of words model*, the exact ordering of the terms in a document is ignored but the number of occurrences of each term is material (in contrast to Boolean retrieval). We only retain information on the number of occurrences of each term. Thus, the document "Mary is quicker than John" is, in this view, identical to the document "John is quicker than Mary". Nevertheless, it seems intuitive that two documents with a similar bag of words representations are similar in content [16].

Tokenisation is applied to break up the streams of customer opinions' documents into tokens, which are meaningful elements. We applied non-letters tokenisation. Then we used the Turkish Snowball stemming algorithm, which finds the stems of the words. All tokens are transformed into lower cases. We also filter tokens by length, removing all the words composed of less than 2 characters and more than 20 characters from the documents. The unnecessary words and the html codes are deleted. A vector space model was used to represent each web page. The word matrices of the customer opinions are extracted.

To estimate the overall valence score for a text, which we denote by v_{text}, we determine the frequency f_i that the ith word from the ANEW study word list has in the text; we then compute a weighted average of the valence of the ANEW study words as in Equation (1). The v_i is the ANEW study's recorded average valence for word *i* [6]. The distribution of psychological valence will show us the customer's happy words. The average valence of a text is given in Equation (1) [2].

$$\gamma_{text} = \frac{\sum k\gamma k - fk}{\sum kfk} \qquad (1).$$

To measure the average emotional valences of the documents, a Turkish dictionary which has emotional valence values is necessary. We used the ANEW dictionary and we translated the words into Turkish. We added some Turkish synonyms words into the dictionary (ie. "life" has two meanings "yaşam" and "hayat" in Turkish). In addition some Turkish words can have more than one meaning in English (i.e. "ev" means "house" or "home").

Table 1 presents some words, which are both in the dictionary and the word vector. If a word which is in the word vector is in the ANEW translation dictionary then we use that word and its frequency in the document/documents to calculate the average valence values. Some of the words in the dictionary and their average valence values are shown in Table 2.

Table 1. **The word list for opinions**

Turkish words	Translation	Frequency
Bilgi	Knowledge	299
Kabul	Acceptance	296
Saygı	Respect	245
Para	Money	34
Arkadaş	Friend	26
Hata	Fault	71
Dünya	World	19
Renk	Colour	18

Table 2. **Some average valence values of the words**

Turkish words	English translation	Average valence
Kabul	Acceptance	7.98
Güzel	Beautiful	7.60
Bomba	Bomb	2.1
Taciz	Abuse	1.70
Altın	Gold	7.54

Table 3 presents the average emotional valences. We can easily see that there is only a small increase in the average values. Fig. 1 presents the network graph of all the opinions according to their average emotional valence values. The relations of the documents according to the average emotional valences can be seen in figure.

Table 3. **The average emotional valence values of the product**

Month	Average valence
December	6.227819872
January	6.228682161
February	6.23086011
3 months period	6.229120473
Average of 3 months	6.22912071
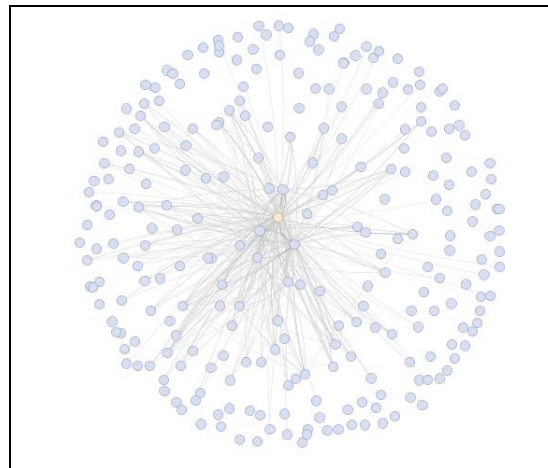
Fig. 1. kk-layout network graph

If we compare the happiness scores of customers' emotional change with other studies [6], our results are acceptable. According to the customer opinions, level of happiness with the product is over the average happiness. We thus achieve the valence measures between all the documents. For example, customer feedback with customer opinion ids, 2 and 21 are near to each other. The distance between these documents' valence values is 5.398. Their emotional valence values are very similar. When we read these customer feedbacks, we see that they are writing nearly the same things.

Conclusions, discussion and further research

Happiness is the gap between the perceptions of the firm and those of the customer as to how the firm should actually be. If the decision makers understand the emotional feelings of the customers, then they can understand how to move them in order to change the behaviours that they want to change. The customer opinions are analysed dynamically based on TM and social networks.

Although there are studies about measuring happiness in different fields, there is no study which measures happiness from online Turkish opinions by using emotional valences. We calculate the average valences of the documents. We measure the product's and the opinions' emotional valences. We then compare the happiness scores of customers' emotional change about the product. Consequently, the firm can easily generate improvement strategies about the feedback system by comparing the happiness scores to change perceptions that drive the behaviors of the customers. Decision makers can also use the results to make decisions.

According to the results, we have numeric values to order the happiness of the customer opinions. If we check the content of the customer opinion documents, the opinions which have close emotional values are very

similar to each other. In addition, the customer opinions with higher average valence scores are written more politely than the rest. In conclusion, although we used the translation of the ANEW dictionary, we find valid results.

The limitation of the research is that it uses a translated dictionary which is not designed for Turkish. Because of the differences in the meaning of happiness due to cultural variations, the translated dictionary's valence values are not adequate to measure Turkish happiness correctly. In future work, we aim to gain a better understanding of the relationships that exist in online customer opinions. For this, we plan to develop a set of normative emotional ratings for the Turkish language in order to standardise materials for researchers in the field of emotion. In addition, we plan to design a Turkish happiness dictionary for online research. We will present the distributions of psychological valences, which will show us the customer's happy words.

Acknowledgment

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АНАЛІЗ ДУМОК ТУРЕЦЬКИХ СПОЖИВАЧІВ НА БАЗІ АНАЛІЗУ ЕМОЦІЙ

Фірми повинні управляти зворотним зв'язком з їх клієнтами, щоб вони могли адаптуватися до швидких змін у навколишньому середовищі. Вони повинні взаємодіяти зі своїми клієнтами, щоб зрозуміти їх і перетворити свою думку в корисні знання. Розуміння почуттів клієнтів про продукт дає конкурентну перевагу фірмам за рахунок безперервного моніторингу ринку. Таким чином, вони можуть генерувати вдосконалення стратегій про систему, щоб змінити сприйняття, які керують поведінкою клієнтів. Фірми можуть проглядати задоволенність своїх клієнтів в якості ключового інструменту для прийняття рішень. Це дослідження обчислює онлайн задоволення від продукту, використовуючи середні емоційні цінності валентних думок клієнтів.

Ми аналізуємо думки турецьких споживачів про продукт протягом періоду 3-х місяців. Ми знаходимо середні онлайн валентні емоційні значення про продукту. Ми також визначили збільшення задоволеності протягом довгого часу. Згідно валентних значень думок, ми знайшли відносини між документами.

Ключові слова: пошук думок, емоційний аналіз, задоволеність, обробка природної мови, аналіз тексту.

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АНАЛИЗ МНЕНИЙ ТУРЕЦКИХ ПОТРЕБИТЕЛЕЙ НА ОСНОВЕ АНАЛИЗА ЭМОЦИЙ

Фирмы должны управлять обратными связями с их клиентами, чтобы они могли адаптироваться к быстрым изменениям в окружающей среде. Они должны взаимодействовать со своими клиентами, чтобы понять их и превратить свои знание в полезные. Понимание чувств клиентов о продукте дает конкурентное преимущество фирмам за счет непрерывного мониторинга рынка. Таким образом, они могут генерировать совершенствования стратегий о системе, чтобы изменить восприятие, управлятьповедением клиентов. Фирмы могут просматривать удовлетворенность своих клиентов в качестве ключевого инструмента для принятия решений. Это исследование вычисляет онлайн удовольствие от продукта, используя средние эмоциональные ценности валентных мнений клиентов.

Мы анализируем мнения турецких потребителей о продукте в течение периода 3-х месяцев. Мы находим средние онлайн валент-ные эмоциональные значения о продукте. Мы также определили увеличение удовлетворенности в течение долгого времени. Соглас-но валентных значений мыслей, мы нашли отношения между документами.

Ключевые слова: поиск мыслей, эмоциональный анализ, удовлетворенность, обработка естественного языка, анализ текста.

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FINANCIAL GLOBALIZATION – GLOBAL IMBALANCES – GLOBAL FINANCIAL CRISIS

In the context of globalization, global financial crisis reflected the evolution of the relation global finance – global economy. The paper focuses on two issues. First, we review a part of the literature regarding the costs and benefits of financial globalization and the links between financial globalization, global imbalances and crises. Second, we discuss whether the financial globalization associated with global imbalances contributed to the 2008 global financial crisis. We conclude that global imbalances (GDP, current account, capital flows and international reserves) played a key role in determining the incidence and propagation of the global financial crisis both in advanced and developing economies. But they are still not resolved and so the risk to power a new global crisis remains high. Therefore economic and financial globalization has to redefine the links between international finance and global economy nowadays.

Key words: financial globalization, global imbalances, global financial crisis.

Introduction. In the context of globalization, global financial crisis reflected the evolution of the relation global finance – global economy. The question is whether the financial globalization associated with global imbalances contributed to the global financial crisis.

Methodology. *In the beginning we **review a part of the literature*** regarding the costs and benefits of financial globalization and the links between financial globalization, global imbalances and crises.

In their paper, Kose et al. [1] give a conceptual framework for structuring the literature regarding the *costs and benefits of financial globalization.*

The main risks of financial globalization highlighted by Schmukler and Zoido-Lobatón [2] are: financial crises when financial liberalization is not well managed; domestic financial system deterioration if the financial infrastructure does not meet the integration requirements.

In addition, Schmukler [3] shows the benefits – especially the development of the financial system – and risks of financial globalization for developing countries.

Kenen [4, p. 182] warns of the risk that "resides in the way that the United States has exploited financial globalization to finance its current account deficit and, indirectly, its budget deficit. [...] The global financial system is a source of strength but likewise a source of risk, and thus calls for close cooperation among the world's major countries."

Faia and Iliopulos [5, p. 1] compare alternative monetary policy regimes for alternative degrees of financial globalization. They find that "the impossible trinity is reversed: higher financial integration increases the persistence and volatility of the current account and calls for exchange rate stabilization".

Not least, the Institute of International Finance [6] points that capital account integration, risk sharing and financial market development are the main benefits of financial globalization.

Various studies analyses the *links between financial globalization, global imbalances and crises.*

Arestis and Singh [7] explore theoretical framework of financial globalization and its contribution to the 2008 financial turmoil.

The econometric analysis of Milesi-Ferretti and Tille [8] demonstrates that the decrease of capital flows during the 2008 global crisis is correlated with the degree of international financial integration, the domestic macroeconomic conditions and their connection to world trade flows.

Lane and Milesi-Ferretti [9] analyse the global imbalances (capital flows and current account balances) before, during and after the global financial crisis.

On the one side are the authors who believe that globalization can be a cause of a crisis.

Schmukler [10] thinks that globalization can lead to crises due to imperfections in international financial markets and importance of external factors and also through contagion effect.

Eichengreen [11] explores the links between capital flows and crises, on the one hand, and between capital flows and growth, on the other hand, finding a close correlation between capital mobility and crises.

Eichengreen et al. [12] find that financial openness has positive effects on the growth of financially-dependent industries, but they consider that during the financial crises these effects disappear.

Chowdhury and Islam [13] state that the banking and financial sector of the countries that had prudential regulation and control of short-term capital flows remained unaffected by the turmoil in the global financial markets (e.g. India, China and Chile).

In their paper, Obstfeld and Rogoff [14] analyses the connection between global imbalances of the 2000s and global financial crisis, underlining their origins: national economic policies and global financial markets.

Showing that domestic financial crises are more frequent during periods of international financial integration, González-Páramo [15] argues that: "the financial crisis has been a rough reminder that, although financial integration improves the access to financial markets and the opportunities for risk diversification, it may also increase the scope for financial contagion across countries. It is therefore paramount that the financial stability arrangements keep pace with the degree of financial integration."

Thompson [16] stresses the contagion characteristic of the international financial system and pleads for a regulatory response in the context of recent financial crisis.

Borio and Disyatat [17] suppose that the "excess elasticity" of the international monetary and financial system caused the global financial crisis because of "financial imbalances" (unsustainable credit and asset price booms).

Liang [18] perceives financial globalization as a common cause both of the global imbalances and the global financial instability.

Obstfeld [19] thinks that financial meltdown is transmitted and amplified through gross international asset and liability positions.

Caprio_et al. [20] find that during crises emerged negative aspects of financial globalization.

Lane [21] concludes that financial globalization was one of the 2008 crisis causes that also affected crisis management and had an important role in the national differences in credit growth and current account imbalances.

Huwart and Verdier [22] explore the role of financial globalization in the financial crisis, highlighted major malfunctions.

Eichengreen and Rose [23] show that capital control is associated with financial development and institutions and unrelated to exchange rate regime, financial crises, growth, and the terms of trade.

On the other side are those who assume that global crisis is not just a consequence of globalization.

At the question "Does financial globalization by itself lead to economic crises?" the answer of Kose et al. [24] is "Almost certainly no!".

Sulimierska [25] examines if countries with unregulated capital flows are more vulnerable to currency crises, taking into account that there is no evidence that capital account liberalization increases the risk of a currency crisis.

Analysing global imbalances, Blanchard and Milesi-Ferretti [26] argue that as a result of the global financial crisis these decreased and support policy changes to solve remaining distortions.

Globalization, global imbalances and crisis – facts and figures. *Further we discuss whether the financial globalization associated with global imbalances* (GDP, current account, capital flows and international reserves) contributed to the 2008 global financial crisis.

Since 1973, the EU has become the economy with largest share in terms of **global GDP** (with a maximum of 34.5% in 1980 and decreasing trends in the next period, reaching 22.1% in 2015). The USA registered a contraction in the share of global GDP (from 33.3% in 1973 to 26% in 1980 and 24.4% in 2015). Japan ranked third until 2010 (with shares rising in the period 1973-1994 from 9.4% in 1973 to a peak of 18% in 1994, followed by significant reductions between 1995-2015, reaching 5.6% in 2015). Since 2010, China moved to third place as share of global GDP, accounting 9.4% in 2010 and 15.5% in 2015 (Figure 1).
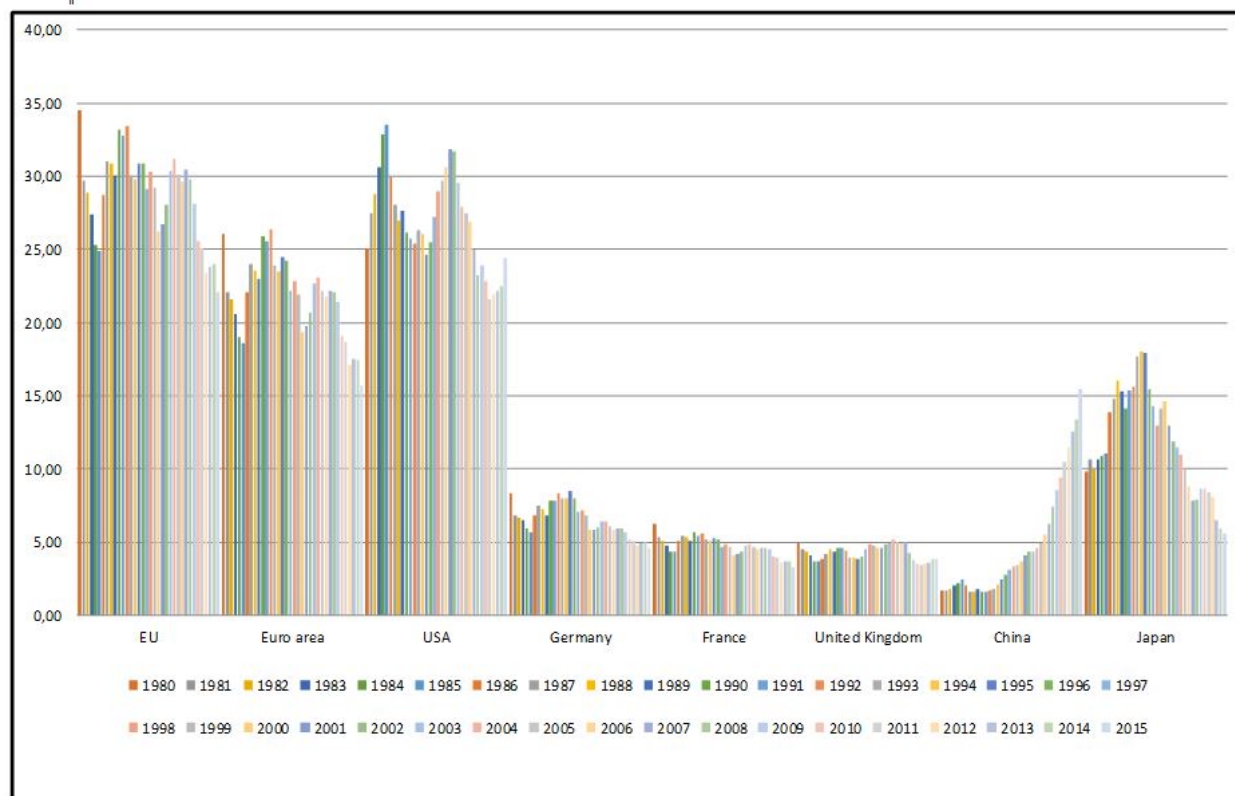

Fig. 1. GDP in 1980-2015 – selected countries (percent of world GDP)

Source: World Bank – World Development Indicators, 2016 [27]

Financial globalization was accompanied by current account deficits in developed economies – USA, United Kingdom, and France – and surpluses in some emerging countries – China since 2003 – (Figure 2). In the late '90s,

the **current account balances** model become more diverse in emerging and developing countries, especially from Asia and Europe. After the Asian crisis, emerging Asia reported large current account surpluses, while emerging Europe highlighted important deficits. Thus these persistent imbalances were built up prior to the global crisis.

China is an example of persistent current account surpluses with a peak in 2007 (10.1% of GDP) and a downward trend in recent years to 3.6% in 2015. The surplus is somehow unexplained, raising a question regarding the role of exchange rates and the desire of some countries to accumulate massive foreign exchange reserves after the Asian crisis.

The USA is the largest deficit country. Chronic current account deficit of the USA peaked in 2006 (6% of GDP), followed by a declining period to 2.6% of GDP in 2015.

The current account positions of euro area fell in moderate surpluses between 0 and 2% of GDP, with an increase to 3.2% of GDP in 2015. Germany's position is noteworthy since 2001 with an increasing current account surplus from 2% to 8.5% of GDP in 2015.

As regards Japan, a country that traditionally have current account surpluses, recorded maximum values in the mid-1980s, in 1998 (3.04% of GDP), 2007 (4.87% of GDP) and 2010 (3.7 of GDP), with a decreasing period to 0.5 of GDP in 2014 followed by a return to 3.0% of GDP in 2015.

Globally, current account positions of the USA, euro area and Japan are weaker rather than they are supported by sustainable fiscal policies, with strong real effective exchange rates of their currencies. On the other side are China and many Asian countries with undesirable strong current account positions and weak real effective exchange rates.
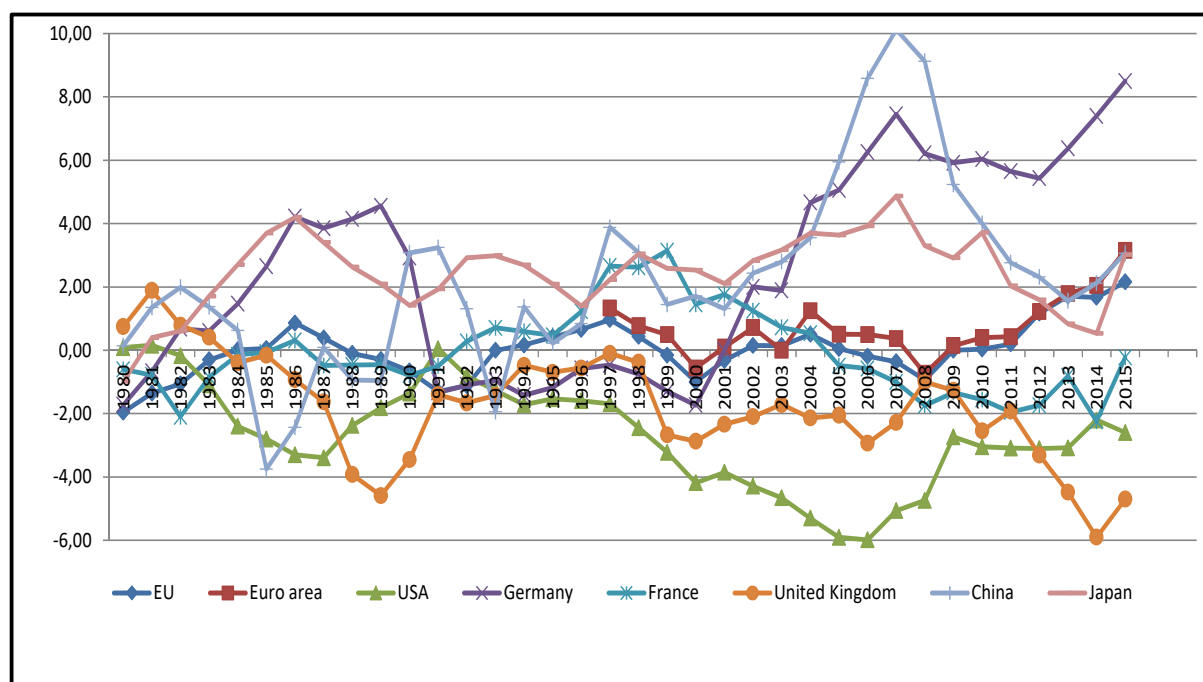

Fig. 2. Current account balance in 1980-2015 – selected countries (percent of GDP)

Source: IMF – World Economic Outlook Database, October 2015 [28]

Massive **capital flows** gone with significant current account deficits and surpluses. Large capital flows, unstable on short and medium term, caused major shocks, such as the crisis in Mexico (1994-1995), Southeast Asia (1997-1998), Russia (1998), Brazil (1998-1999), Argentina (1999-2002), global crisis (2008-present).

Developing and emerging countries have become important destinations of private capital inflows and, especially since 2000s, source of private capital outflows. At the same time, the share of portfolio investments in private capital flows raised thus causing an increase of the financial markets instability.

According to the study of Lin, Fardoust and Rosenblatt [29], global capital flows have held a share of 2-6% of global GDP in the '80s and the first half of the '90s, growing sharply to 15% of world GDP before the 2008 crisis.

So the period of intense globalization, prior to the global crisis, noticed a boom in private capital flows. During the crisis, private capital inflows in developing and emerging countries declined suddenly for a short time to 460.7 billion USD in 2009. After 2010 they followed an upward trend to 596.4 billion USD in 2010 and 668.4 billion USD in 2014.

In the last decade, the policy of **international reserves** accumulation was not only the result of a national policy

selfish objective, but also of the weaknesses of the international monetary system that works with unclear rules.

The value of China's official reserves doubled in 2011 compared to 2007, reaching 3.9 trillion USD in 2014, China holding the first position in the ranking of countries with the largest international reserves, followed by Japan and Russian Federation (in 2007) or Saudi Arabia (in 2014).

Data show a continuous growth of the international reserves holdings before, during and after the global financial crisis.

Conclusion & Discussion. Economic and financial globalization has to redefine the links between international monetary system and global economy nowadays.

In the years of globalization preceding the global financial crisis, the global imbalances have deepened hardly even if the globalization process has bought many benefits. During the global crisis, capital flows declined suddenly and current account balances contracted for a short period. And after the crisis, global imbalances – mainly in capital flows – have returned and remain high, so that we can assume that there has not occurred a major change in the global architecture.

The global financial crisis revealed high imbalances in GDP, current account, capital flows and international

reserves both in developing and developed countries and important deficiencies of the international monetary system. They are still not resolved and so the risk to power a new global crisis remains high.

Governance of globalization should be somewhere between liberalism and interventionism – without generating a de-globalization process – in order to maximize the advantages of financial liberalization and minimize the risks of financial integration and increasing volatility in financial markets.

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ФІНАНСОВА ГЛОБАЛІЗАЦІЯ – ГЛОБАЛЬНІ ДИСБАЛАНСИ – СВІТОВА ФІНАНСОВА КРИЗА

В умовах глобалізації, світова фінансова криза відображає еволюцію ставлення глобальної фінансової – світової економіки. У цьому документі основна увага приділяється двом питанням. По-перше, ми розглядаємо частину літератури про витрати і вигоди від фінансової глобалізації та зв'язок між фінансовою глобалізацією, глобальними дисбалансами і кризами. По-друге, ми обговорюємо чи пов'язана фінансова глобалізація з глобальними дисбалансами в умовах світової фінансової кризи 2008 року. Ми прийшли до висновку, що глобальні дисбаланси (ВВП, рахунку поточних операцій, потоків капіталу і міжнародних резервів) відіграють ключову роль у визначенні частоти і поширення світової фінансової кризи як в розвинених країнах, так і в країнах, що розвиваються. Але вони до сих пір не вирішені, і тому ризик до влади нової глобальної кризи залишається на високому рівні. Тому економічна та фінансова глобалізація повинні бути переглянутими у зв'язку з міжнародними фінансами та світовою економікою в даний час.

Ключові слова: фінансова глобалізація, глобальні дисбаланси, світова фінансова криза

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ФИНАНСОВАЯ ГЛОБАЛИЗАЦИЯ – ГЛОБАЛЬНЫЕ ДИСБАЛАНСЫ – МИРОВОЙ ФИНАНСОВЫЙ КРИЗИС

В условиях глобализации, мировой финансовый кризис отражает эволюцию отношения глобального -финансового – мировой экономики. В этом документе основное внимание уделяется двум вопросам. Во-первых, мы рассматриваем часть литературы про издержки и выгоды от финансовой глобализации и связь между финансовой глобализацией, глобальными дисбалансами и кризисами. Во-вторых, мы обсуждаем связана ли финансовая глобализация с глобальными дисбалансами в условиях мирового финансового кризиса 2008 года. Мы пришли к выводу, что глобальные дисбалансы (ВВП, счета текущих операций, потоков капитала и международных резервов) играют ключевую роль в определении частоты и распространения мирового финансового кризиса как в развитых странах, так и в развивающихся странах. Но они до сих пор не решены, и поэтому риск прихода к власти нового глобального кризиса остается на высоком уровне. Поэтому экономическая и финансовая глобализация должны быть пересмотренным в связи с международными финансами и мировой экономикой в настоящее время.

Ключевые слова: финансовая глобализация, глобальные дисбалансы, мировой финансовый кризис.

EXTENDED ABSTRACT IN ENGLISH AND REFERENCES (IN LATIN): TRANSLATION / TRANSLITERATION / TRANSCRIPTION

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THE SIGNAL APPROACH TO MODELLING THE BALANCE OF PAYMENT CRISIS

Ukraine has repeatedly met the challenge of overcoming the balance of payments crisis. The crises of 1998, 2008 and 2014 carried a negative impact on the banking system, stability of the currency, economic growth, and consequently led to lower social standards and living standards. Balance of payments crisis is characterized by a sharp depreciation of the currency, reduction of international reserves, and increased interest rates. It has the greatest impact on developing countries with high dependence on the conditions of individual commodity markets. That is how Ukraine can be described as well.

The issue of crisis simulation processes and the possibility of their prediction are of vital importance. The scientific community generated considerable interest in this subject only in the second half of the twentieth century which was caused by the fact that deepening of trade ties started to hit developing countries. Approaches to explaining the mechanisms to promote balance of payments crisis were widely covered in the works of G. Kaminska, K. Reinhart and P. Krugman. Subsequently systems of early warning of crises that allowed to estimate the probability of a crisis over the next period began to emerge. For Ukraine, the issue of developing an adequate model for balance of payments crisis remains open and most important, as the crisis processes have significantly intensified since 2014. According to the examined problem we have investigated the most effective ways to model the crisis in Ukraine. For mathematical formalization of balance of payment crisis, comparative analysis of the effectiveness of different calculation methods of Exchange Market Pressure Index was performed. A set of indicators that signal the growing likelihood of balance of payments crisis was defined using signal approach. With the help of minimization function thresholds indicators were selected, the crossing of which signalize increase in the probability of balance of payment crisis.

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NEW HORIZONS IN CULTURAL ECONOMICS:
SOUTHEASTERN ANATOLIA REGION IN UPPER MESOPOTAMIA AS A CASE STUDY

When rich cultural structure, geo-politic, geo-strategic structures of the region are considered will have an important role in the cultural economy of the region. For this reason, it is important to assemble the cultural economy effectively and to use it for the development of the region which has important historical ruins such as Zeugma and Hasankeyf.

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FINANCIAL DEVELOPMENT AND REMITTANCES IN RBMU'S COUNTRIES

The aim of this paper is to evaluate the state of development of financial system from 3 of those countries that European Union has established relation through Partnership Program, added Romania also. The research is based on the empirical evidence about the structure and performance of financial systems from RBMU's countries (Romania, Belarus, Ukraine and Moldova). The results are correlated with the influence of remittances inflows in fostering the development of financial systems, especially banking systems, analyzed from the reverse casualty approach.

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MARKETING CONSIDERATIONS ON BRAND COMMUNITIES

Most consumers spend an important part of their free time looking for online information about the brands before taking a decision to purchase. The Internet is the main factor which has led to a considerable increase of the time allotted by consumers for search and comparing information about brands, as a step preceding the decision to purchase and also one of the most important factors that influence the interaction between the brand and the consumer.

Although the general trend is that the public to become more active and more involved in the choice of the brand, consumer's responses to its messages obviously depend on cultural, social or economic factors. The work has the purpose to clarify what brand community means and how it appeared – if it was really built from scratch or it has already existed in a latent way and it must only be recognized – the characteristics of successful communities, which of the objectives of the brands can be achieved by means of these groups, what is the role of social media in the development of these communities, what kind of types of members are likely to be encountered inside of the online communities and what is their proportion for each and which are the research methodologies that can give support to companies in monitoring these groups.

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SAMPLING IN EXTERNAL AUDIT – THE MONETARY UNIT SAMPLING METHOD

This article approaches the general issue of diminishing the evidence investigation space in audit activities, by means of sampling techniques, given that in the instance of a significant data volume an exhaustive examination of the assessed population is not possible and/or effective. The general perspective of the presentation involves dealing with sampling risk, in essence, the risk that a selected sample may not be representative for the overall population, in correlation with the audit risk model and with the component parts of this model (inherent risk, control risk and non detection risk) and highlights the inter-conditionings between these two models.

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EMOTION BASED ANALYSIS OF TURKISH CUSTOMER OPINIONS

Firms should manage their customer feedback so they can adapt to rapid changes in the environment. They have to interact with their customers to understand them and to turn their opinions into useful knowledge. Understanding customers' feelings about a product gives firmS competitive advantage through continuous market monitoring. They can thus generate improving strategies about the system to change perceptions that drive the behaviours of the customers. Firms can view their customers' happiness as a key tool for decision-making. This study calculates online product happiness by using the average emotional valence values of customer opinions.
We analyse Turkish opinions about a product over a period of 3 months. We find the averages of the online emotional valence values of the product per month. We also determined the increase in happiness over time. According to the opinion valence values, we found the relations between the documents.

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FINANCIAL GLOBALIZATION – GLOBAL IMBALANCES – GLOBAL FINANCIAL CRISIS

In the context of globalization, global financial crisis reflected the evolution of the relation global finance – global economy. The paper focuses on two issues. First, we review a part of the literature regarding the costs and benefits of financial globalization and the links between financial globalization, global imbalances and crises. Second, we discuss whether the financial globalization associated with global imbalances contributed to the 2008 global financial crisis. We conclude that global imbalances (GDP, current account, capital flows and international reserves) played a key role in determining the incidence and propagation of the global financial crisis both in advanced and developing economies. But they are still not resolved and so the risk to power a new global crisis remains high. Therefore economic and financial globalization has to redefine the links between international finance and global economy nowadays.

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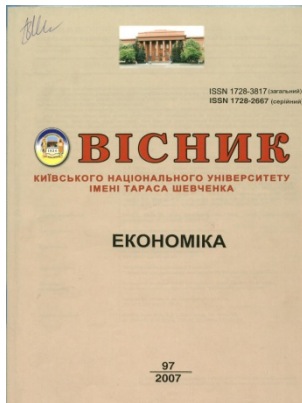
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