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The methodical approach to the establishment of interdependencies in the development of insurance and tourism markets

Abstract

In the recent years tourism market belongs to the sphere of interests of insurers. Insurance companies are interested in increasing tourist flows while tourist companies are interested in providing quality insurance of their services, especially those services which are related to international tourism. On the basis of economic and mathematical methods (structural analysis, the Savage method) the article studies interdependencies in the functioning of insurance and tourism markets. The relationship is determined by using the examples of the markets in Ukraine, France and the United States.

Keywords: insurance market, tourism market, market performance indicators, interdependence of development, level of partnership of the insurance and tourist markets, tourism weight, economic and mathematical modeling.
JEL Classification: C5, G22.

Introduction

In the recent years there is an increase in the sales of products by insurance companies which are associated with the risks from certain types of tourist activities. These include accident insurance, insurance against cancellation\interruption of tours, health insurance, medical expenses insurance, insurance against terrorist attacks during travels, carrier liability insurance, insurance against the risk of the complete cessation of companies' activity because of the inability to organize tourist travels due to force majeure circumstances, etc.

In 2013, the share of tourism in the world GDP amounted to more than 2300 billion dollars (in 2012 – 2.056 trillion dollars). In 2012 the global revenues from international tourism totaled 1.243 trillion dollars while investments in the tourism industry stood at 4.7% of the general volume of world investments amounting to 764.7 billion dollars. According to the report of the Secretary-General of the World Tourism Organization (UNWTO), which was presented at the 57th session of the UNWTO Commission for Europe on April 4, 2014 in Baku (Azerbaijan), in 2013 the number of tourist arrivals increased by 5% compared to 2012 and exceeded 1 billion people.

Considering the mandatory insurance of those traveling abroad, with the growth of world tourist flows there is an increase in the number of the concluded insurance contracts. Recent studies of the insurance market suggest that the volume of travel insurance in the world among other types of insurance has increased by 20% overall. Insurers, as subjects of entrepreneurial activity, respond to market changes and focus their attention on expanding the number of insurance products in tourist insurance. In this context it is important to understand the development trends of the insurance and tourist markets in the world and how these markets influence each other.

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1. Analysis of the recent research and publications

In the economic literature the functioning of the insurance market has been highlighted in the works of such scholars as L. Van den Berghe [12], J.D. Cummins [1, 2], S. Kozmenko [8], O. Kuzmenko [9], S. Lumpkin [10], I. Falautano [5] and others. There has been much less research conducted in the area of tourism insurance. This is explained by the fact that tourism insurance is not specifically defined among the types of insurance.

2. Earlier unresolved parts of the problem

The prospects for cooperation of insurance and tourist companies require a deeper analysis. Particularly interesting is the establishment of the correlation levels between the development of insurance and tourism markets (integral indicator) and individual indicators of these markets.

3. Goal of the research

To offer a scientific and methodical approach, which, by using the methods of economic and mathematical modeling, will provide an opportunity to assess the interdependence of the insurance and tourism markets.

4. The main results of the research

Today tourism, especially international tourism, is one of the fastest growing sectors of the world economy. This market accounts for 9% of the global GDP, 6% of exports, every 11th job. According to the UNWTO, international tourism will keep developing rapidly in the future. In 2020, the number of travelers will reach 1.6 billion people a year, i.e. it will increase by 2.4 times compared to the beginning of the century. Regarding the tourism revenues, the UNWTO estimates their growth by 4.3 times compared to 2000. It is expected that from 2010 to 2030 the demand will grow by 3.3% and will reach 1.8 billion arrivals. The developing countries will

increase their market share from 30% in 1980, 47% in 2012 to 57% in 2030. In 2013 the leading positions in terms of the number of arrivals were occupied by Southeast Asia (+ 10%), Central and Eastern Europe (+ 7%), Southern Europe and the Mediterranean (+ 6%), North Africa (+ 6%) [7].

There is a growth of the share of mass tourism in the tourist flows, which is associated with a reduction in consecutive vacation days and increase of their frequency, low cost airlines, the use of charters, the growth of jobs in mass tourism and so on. The prevailing "suppliers" of tourists to the international markets are the developed countries of Europe (primarily – the UK), America and Asia-Pacific region.

Europe is a leader in the number of arrivals of international tourists, because of the proximity of a large number of small countries (short trips), the developed infrastructure, the high level of transport services, the availability of natural and cultural monuments of world importance, a wide range of tourism products, highly qualified staff, etc. [11].

It should be emphasized that in the developed countries significant attention is paid to the mobilization of sufficient financial resources to carry out preventive measures to prevent risks in tourism, improve the system of losses regulation and insurance payment through the creation of specialized insurance pools, catastrophe reserves and warning systems. Risks arise immediately when tourists go abroad (climate, food, living conditions, social and cultural structure). Also, it is necessary to keep in mind the international nature of transactions on tourist services, the fact that many business entities are involved in the process of providing tourism services.

Since insurance companies are business entities, their main purpose is to increase capital and maximize profits. One way to improve profitability is to expand their customer base and create new insurance products. From this perspective, the development of tourism insurance is the possibility to guarantee profit maximization. Thus, one could argue about the financial benefits from cooperation of insurance companies with the entities of the tourism market, and in a global sense – from cooperation of the subjects of insurance and tourism markets.

Within this paper it is offered to assess the cooperation prospects of the insurance and tourism markets by using the examples of the USA, France and Ukraine. As the main instrument for assessing the interdependence between the insurance and tourism markets we offer a structural analysis which is based on the reflection of permanent internal connections between the elements of the researched objects, with consideration of its properties, invariance, integrity and dynamism. To solve this problem in the static form we have decided to use the algorithm presented in Figure 1 (see Appendix).

In our calculations we have used the data presented on the websites of the World Statistics (World Statistics.org) [13], the World Health Organization [6], the State Statistics Service of Ukraine [4], the State Commission for Regulation of Financial Services Markets [3]. Information on Ukraine, France and the United States in the period between 2000 and 2013 is presented in Tables 1-3 (see Appendix).

It is evident that the choice of the indicators to characterize the markets (X_1-X_{18}) is not completely successful. Ideally, this should have been a much wider range of indicators for each market with more specific indicators, but apart from the relevance it was also caused by the fact that for these indicators the statistics could be obtained from the open sources.

By using the structural modeling and the "Statistica" software we receive the regression model and the system of equations describing the interdependence between indicators and structurally describing the interdependence between the markets.

The iterative process, particularly for the data on Ukraine, was successful, the values of ICSF Criterion and ICS Criterion were close to zero, the values of the Discrepancy Functions were low, and the values of Maximum Resedual Cosine and the Maximum Absolute Gredient were close to zero. All of these factors indicate the model's adequacy.

The next step in the analysis of interdependence of insurance and tourism markets could be the following scientific and methodical approach that makes it possible to estimate the level (depth) of partnership (interpenetration) of these markets through the gradual application of several mathematical models (Fig. 2).

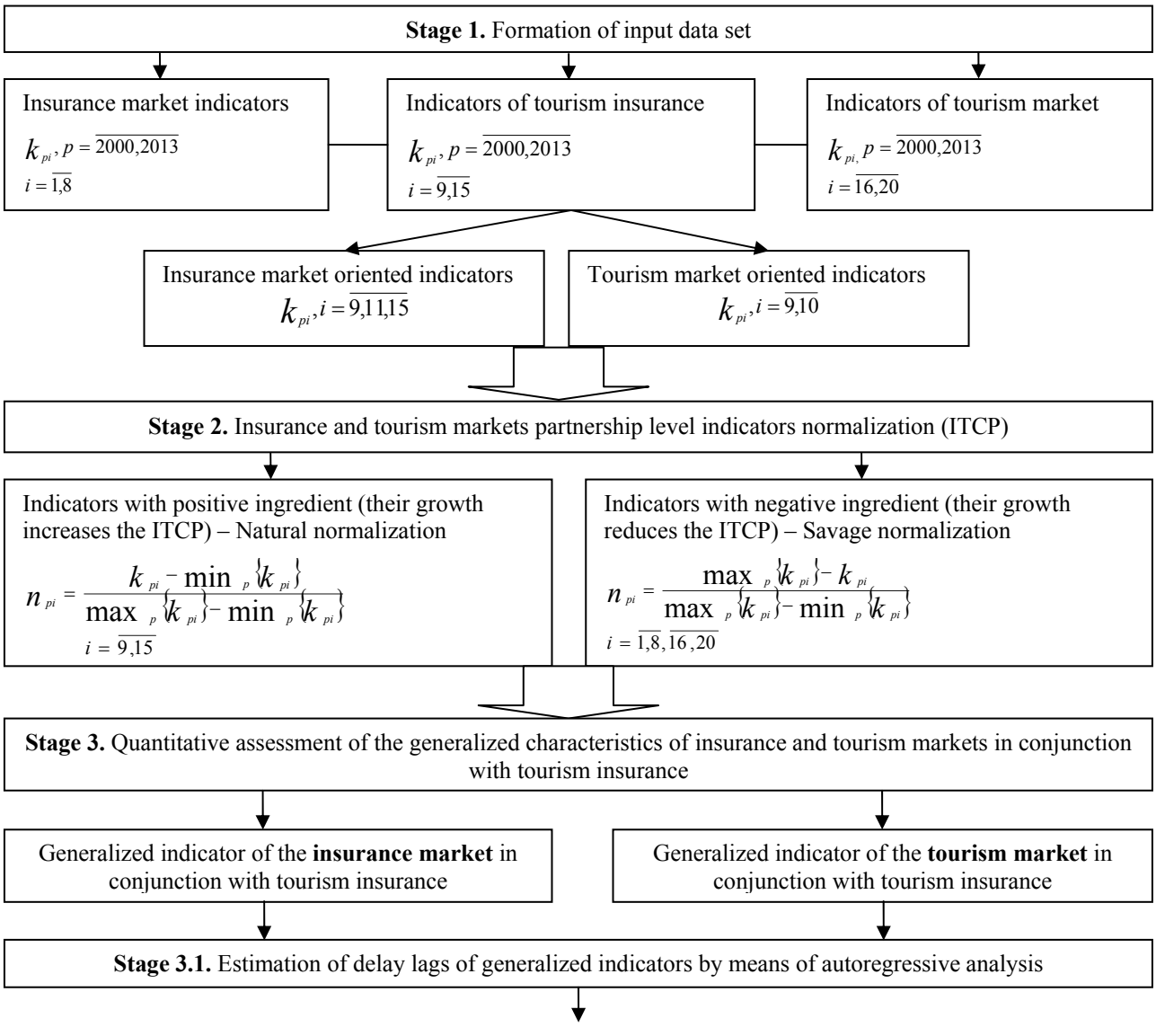
During the calculation of the level of partnership we have used the statistical data presented in Table 4.

Table 4. Indicators for the calculation of the partnership level of insurance and tourism markets.

Indicator	Description	Unit of measurement
Insurance market		
k1	The ratio of the volume of non-life insurance premiums to population	$USA
k2	The ratio of the volume of life insurance premiums to population	$USA
k3	The ratio of the volume of non-life insurance claims to population	$USA

Table 4 (cont.). Indicators for the calculation of the partnership level of insurance and tourism markets.

Indicator	Description	Unit of measurement
k4	The ratio of the volume of life insurance claims to population	$USA
k5	The ratio of the volume of non-life insurance premiums to GDP	$USA
k6	The ratio of the volume of life insurance premiums to GDP	$USA
k7	The ratio of the volume of non-life insurance claims to GDP	$USA
k8	The ratio of the volume of life insurance claims to GDP	$USA
The market of tourism insurance		
k9	Air transport, passengers carried	mln. passengers
k10	Railways, passengers carried	million passenger-km
k11	Accident & Health Insurance, gross premiums	$USA
k12	Government expenditures on health	$USA
k13	Per capita total expenditures on health	$USA
k14	Per capita government expenditure on health	$USA
k15	Per capita total expenditure on health at average exchange rate	$USA
Tourism market		
k16	International tourism, number of arrivals	mln. people
k17	International tourism, number of departures	mln. people
k18	International tourism, expenditures	% of total imports
k19	International tourism, expenditures	$USA
k20	International tourism, expenditures for travel items	$USA



Stage 3.2. Estimation of the level of the generalized indicator of:

Insurance market in conjunction with tourism insurance

$$STS = \frac{1}{n}[n_{1,t-4} + n_{2,t-1} + n_{3,t-4} + n_{4,t} + n_{5,t-1} + n_{6,t} + n_{7,t-3} + n_{8,t} + n_{11,t-3} + n_{12,t-4} + n_{13,t-2} +$$

$$+ n_{14,t} + n_{15,t-4}] = \frac{1}{13}[\sum_{i=1}^{8} n_{i,t-\tau_j} + \sum_{i=16}^{20} n_{i,t-\tau_g}]\tau_j = \{4;1;4;0;1;0;3;0;3;4;2;0;4\}$$

Tourism market in conjunction with tourism insurance

$$TTS = \frac{1}{z}[...] = \frac{1}{7}\left[\sum_{i=9}^{10} n_{i,t-\tau_g} + \sum_{i=16}^{20} n_{i,t-\tau_g}\right]$$

$$\tau_g = \{1;8;0;3;1;5;2\}$$

Stage 3.3. Graphic interpretation of the partnership level of insurance and tourism market

Stage 3.4. Approximation of the dependence of generalized indicators STS and TTS on the time factor

$$TTS(t) = 967769.17 - 1.4347 * t^2 + 0.00095 * t^3 - 1.77 * 10^{-7} * t^4$$

$$STS(t) = 11818263.6 - 17635 * t + 8.7715 * t^2 - 0.0015 * t^3$$

Stage 4. Insurance and tourism markets partnership level calculation

$$RITS(t) = \frac{1}{2}\left(\frac{\left[\int_{t-1}^{t+1} STS(t)dt\right] \cap \left[\int_{t-1}^{t+1} TTS(t)dt\right]}{\int_{t-1}^{t+1} STS(t)dt} + \frac{\left[\int_{t-1}^{t+1} STS(t)dt\right] \cap \left[\int_{t-1}^{t+1} TTS(t)dt\right]}{\int_{t-1}^{t+1} TTS(t)dt}\right)$$

Stage 5. Qualitative interpretation of the level of partnership of insurance and tourism markets

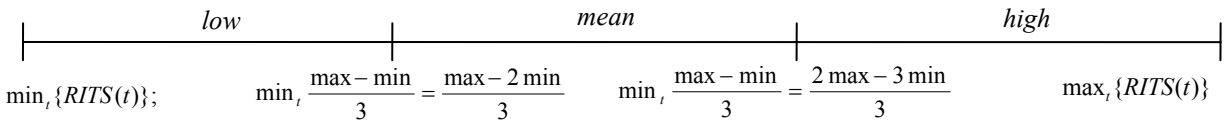


Fig. 2. Insurance and tourism markets partnership level assessment algorithm

All indicators were normalized by using the Savage method and the method of natural normalization as they had an absolute and relative character. Then we built a correlogram for each indicator, which made it possible to determine the lags of the generalized indicator – the level of integration for the two analyzed markets (insurance and tourism) in conjunction with tourism insurance. Estimation of the quantitative assessment of the markets from the point of view of integral processes and delay lags of the studied indicators by means of autoregressive analysis is carried out during the third stage. During stage 3.2., after mathematical transformations we obtain the level of generalized indicator for insurance and tourism markets. During stage 3.3. we graphically interpret the dynamics of insurance and tourism markets for each country.

During stage 3.4. we approximated the dependence of the generalized indicator of tourism and insurance markets on the time factor.

To calculate the final results of the level of partnership we decided to use the integral sum of the obtained figures' planes (figures that form the insurance and tourism market in the points where they cross), as according to the basic idea of the proposed model, the determination of an overall level (depth) of the markets' partnership is carried

out by summing the obtained planes formed under the points of crossing of insurance and tourism markets. It was also decided to introduce the RITS (t) indicator.

As a result of the calculations we obtain the indicators of the levels of integration of insurance and tourism markets in the studied countries (Table 5).

Table 5. Level (depth) of partnership of insurance and tourism markets in Ukraine, France and the USA

Year	The level of partnership of the markets		
	Ukraine	France	USA
2006	6.27	14.46	54.23
2007	2.97	19.47	56.69
2008	6.54	19.76	48.75
2009	12.82	3.11	6.97
2010	12.34	8.84	10.76
2011	11.33	27.02	20.02
2012	5.31	23.74	8.87
2013	1.55	15.36	27.65

Previously, we have considered the interaction of insurance and tourism markets in certain countries. Further, we will try to assess the level of cooperation in the tourism sector (the level of tourist exchanges). We propose to determine the indicator of tourist attraction of countries (RL_{ij}), which is determined by considering the indicators of the level of partnership of insurance and tourism markets in these countries. To solve this problem we use the method of gravity modeling, which describes the social and economic interaction between spatial objects (cities, regions, countries, etc.).

$$RL_{ij} = g\frac{m_i \cdot m_j}{R_{ij}^2} = \frac{\Delta S_{tj}/S}{\Delta t/t} \cdot \frac{m_i \cdot m_j}{R_{ij}^2} =$$

$$= \frac{\sum_{i=1}^{5} \overline{S}_{tj}}{5} \cdot \frac{m_i \cdot m_j}{R_{ij}^2} = \frac{\sum_{i=1}^{5} \frac{\sum_{t=1995}^{2013} \frac{S_{ti} - S_{ti-1}}{S_{ti-1}} / \frac{1}{t}}{N}}{5} \cdot \frac{m_i \cdot m_j}{R_{ij}^2},$$

where RL_{ij} is an indicator of the tourist attraction of countries i and j; m_i is the level of partnership (average) of insurance and tourism markets in country i; m_j is the level of partnership (average) of insurance and tourism markets in country j; S_{ti} is the number of tourist arrivals in the year t in country i; $S_{ti\text{-}1}$ is the number of tourist arrivals in the year t in country j; t is the year for which the estimates of tourist arrivals in country j are made; $\overline{S}_{ti}$ is the average rate of changes in the number of tourist arrivals for country j, weighted by the rate of time change; N is the number of years of the analyzed time period; g is the average rate of changes in the number of tourist arrivals, weighted by the rate of time change; R_{ij}^2 is the square of the distance between countries i and j; ΔS is an absolute increase in the number of tourist arrivals; $\Delta S / S$ is the rate of change in the number of tourist arrivals; $\Delta t / t$ is the rate of time change.

The results of the calculations are presented in Table 6.

Table 6. The results of calculations for the indicators of tourist attraction (Ukraine, France, Ukraine, United States)

From	To	Indicator of attraction (intermediate, without multiplying by g)	Indicator of attraction (final)
Ukraine (Kyiv)	France (Paris)	2.19E-05	2.996785831
Ukraine (Kyiv)	USA (Washington)	3.51E-06	0.481031372

Conclusions

In establishing the dependencies between insurance and tourism markets the highest results were demonstrated by France and Ukraine. As for the calculation of the partnership level, the lowest level was discovered for Ukraine. Graphical results demonstrate unstable development of insurance and tourism markets, a high degree of volatility and significant decline for the insurance market during the global financial crisis of 2008-2009. For the tourist market the decline occurred later: in 2009-2010. However, the lowest level of partnership was in 2007 and 2013.

The results of calculations of tourism indicators revealed that their highest level was observed between the European countries, such as Ukraine and France. The distance between these countries is the smallest and the coordination takes place in the same geographic area – in the European region, hence the legislation basis and the public pressure on the functioning of insurance and tourism markets tend to achieve unification and standardization.

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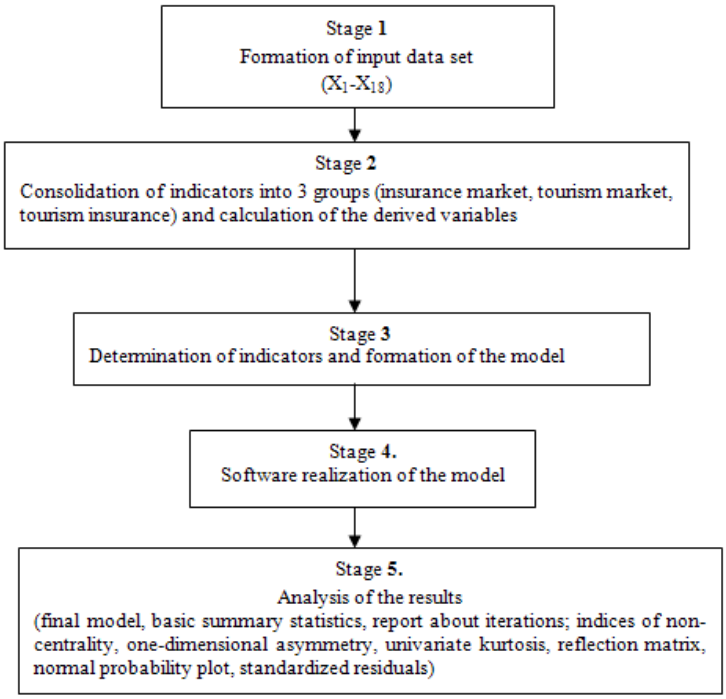
Appendix



Notes: X_1 – international tourism, number of arrivals; X_2 – international tourism, number of departures; X_3 – international travel expenditure (% of total imports); X_4 – international tourism, expenditures (% of total imports); X_5 – international tourism, expenditures for travel items (current US$); X_6 – the volume of non-life insurance premiums (mln. US$); X_7 – the volume of life insurance premiums, (mln. US$); X_8 – population; X_9 – GDP (bln. US$); X_{10} – the volume of non-life insurance claims (mln. US$); X_{11} – the volume of Life insurance claims (mln.US$); X_{12} – air transport, passengers carried; X_{13} – railways, passengers carried (million passenger-km); X_{14} – accident & health insurance, gross premiums (mln. $); X_{15} – per capita government expenditure on health at average exchange rate (US$); X_{16} – per capita total expenditure on health (PPP int.$); X_{17} – per capita government expenditure on health (PPP int.$); X_{18} – per capita total expenditure on health at average exchange rate (US$).

Fig. 1. Stages in the assessment of interdependence of insurance and tourism markets

Table 1. Input data for Ukraine

Year	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
2000	6431000	13422000	9.04	561000000	470000000	410271.23	1977881.3	49175848	162	72096.04	16801.25	950697	51767	39086434	18.5	183.7	95.5	35.6
2001	9174000	14849000	8.67	676000000	566000000	479752.18	2435907.2	48683865	180	84165.05	28718.87	986022	49661	46765373	24	209.5	114.2	44.2
2002	10517000	14729000	8.32	794000000	657000000	561000	3000000	48396470	205	98254.45	49090	1119889	50544	55952919	30.9	249.7	140.9	55
2003	12514000	14795000	7.98	953000000	789000000	1699000	14000000	48055439	218	156000	472000.72	1652632	52558	66945454	42.4	311.9	182.5	72.7
2004	15629000	15588000	7.65	2660000000	2463000000	1699000	14000000	47732079	260,4	277909.09	2145000.5	2200094	51726	75381818	52.9	345.2	202.9	90.4
2005	17631000	16454000	7.34	3078000000	2805000000	2894000	29000000	46996765	321,2	342636.36	1763000.6	2512910	52655	94563636	69.7	357.7	213.6	117.2
2006	18936000	16875000	6.23	3202000000	2834000000	2649000	89000000	46787750	290	469745.45	2909000.1	2801992	53230	131527272	89.3	397.3	242.9	147
2007	23122000	17335000	5.78	4022000000	3569000000	3318000	151000000	46299862	321,3	761636.36	4345000.5	1736018	53230	185672727	120.2	440.6	274.7	194.4
2008	25449000	15499000	4.73	4585000000	4023000000	4112000	187000000	45700395	201,2	701300	3770000	3456288	53056	145120000	148.2	482.9	281.3	257
2009	20798000	15334000	6.94	3751000000	3330000000	2518000	106000000	45700395	294,3	710053.19	6670000.2	3427818	48327	178061728	108.8	490	273.4	197.6
2010	21203000	17180000	5.94	4134000000	3742000000	2707594	11068376	45870700	304	712234.43	6422000.5	3956053	50240	204768292	131.1	520.4	298.3	231.3
2011	21415000	19773000	5.15	4829000000	4461000000	2632119	16601726	45706100	326	570727.49	8705000.3	5477655	50569	332817073	145.9	527.9	272.7	261.8
2012	23013000	21433000	5.48	5536000000	5104000000	2364789	21722689	45593300	332,7	608499.39	9855000.9	5671585	49203	336361445	160.6	562	297.62	292.8
2013	25592603	22285469	5.35	5813531593	5104000000	3135940.12	29661077	45306807	353,26	539233.53	17868000	6581774.1	48995.15	402443165	192.29	616.89	324.81	349

Table 2. Input data for France

Year	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
2000	77190000	19886000	7.80	26703000000	22533000000	30251.75	57159.3	60911057	1534.0	247337.21	48819.69	52581312	69860	10890493	1753.8	2553.5	2021.40	2209.2
2001	75202000	19265000	7.61	26749000000	22616000000	34104.98	65474.9	61355725	1629.0	268032.77	53379.08	50476541	71209	11359813	1779.0	2726.5	2157.10	2241.0
2002	77012000	18315000	7.42	27808000000	23769000000	38449.00	75000.1	59765983	1510.0	290460.00	58364.28	49305864	73227	11849358	1988.0	2931.2	2328.20	2496.5
2003	75048000	18576000	7.23	32618000000	28059000000	58244.00	105436.0	60180529	1558.0	443770.00	76683.81	47258820	71937	12360000	2441.1	2964.2	2354.50	3137.4
2004	74433000	21131000	7.06	36029000000	30018000000	58244.00	105436.0	60424213	1661.0	494860.00	88043.22	48543473	74014	15116000	2812.2	3101.6	2451.70	3620.0
2005	74988000	22480000	6.88	38813000000	31727000000	65811.00	128813.0	60656178	1816.0	495280.00	96131.00	52477178	78306	16306000	2914.2	3265.7	2598.60	3749.9
2006	77916000	22240000	6.28	39331000000	32693000000	73262.00	177902.0	63617975	1994,0	741650.00	103273.34	59537872	78465	46890000	3016.6	3446.0	2745.30	3907.0
2007	80853000	28103000	6.38	46029000000	38261000000	81907.00	186993.0	64057790	2067.0	567900.00	126011.01	61551258	83299	41963000	3409.1	3610.4	2874.90	4412.7
2008	79218000	25506000	6.12	50021000000	41277000000	91861.00	181146.0	64057792	2097.0	617640.00	152834.04	61214656	88283	23163000	3746.2	3773.7	2889.30	4876.9
2009	76764000	25140000	6.59	45806000000	38416000000	88993.00	194077.0	64057792	2113.0	603710.00	129904.04	58318312	87667	22686000	3676.7	3971.2	3040.00	4775.9
2010	77648000	25041000	6.18	46157000000	38608000000	100328.22	222311.3	65031235	2260.0	653880.00	140055.52	55744403	86853	22527000	3565.3	4026.6	3075.00	4633.6
2011	81550000	26155000	6.14	53914000000	45017000000	115061.11	259642.4	65371613	2369.0	675720.00	175486.16	58785959	88064	24719000	3813.2	4128.4	3135.20	4968.3
2012	83013000	25450000	5.77	47159000000	38936000000	134565.82	310042.0	65696689	2416.0	648740.00	198319.14	60158458	85634	23815000	3608.7	4260.2	3262.82	4690.0
2013	83517637	25978624	5.69	47930673914	39606049594	160937.09	379727.2	66112071	2509.21	693669.67	227189.78	60837142	87099	25615250	3832.35	4445.85	3407.98	4993.64

Table 3. Input data for USA

Year	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
2000	51238000	61327000	5.33	91473000000	67860000000	417917.87	430347.7	282162411	10289.70	520699.33	203724.83	665327414	8486	231162273	2061.90	4790.00	2031.80	4790.00
2001	46927000	59442000	5.27	85610000000	63689000000	438744.02	436831.5	284968955	10625.30	546003.60	207765.01	622187846	8561	246509974	2261.80	5137.80	2231.20	5137.80
2002	43581000	58065000	5.21	81860000000	62671000000	460608.00	443413.0	280562489	10625.30	572537.57	211885.31	598410415	8637	262876665	2450.20	5578.40	2404.80	5578.40
2003	41218000	56250000	5.14	82091000000	61966000000	574579.00	480919.0	290342554	10980.20	600361.00	216087.32	588997110	8714	280330000	2622.40	5992.70	2620.70	5992.70
2004	46086000	61809000	5.08	94764000000	71034000000	574579.00	480919.0	293027571	11512.20	624385.00	220372.66	678110608	8791	297923000	2800.70	6354.50	2798.80	6354.50
2005	49206000	63503000	5.02	100250000000	75061000000	603018.00	128813.0	295734134	12277.00	679559.00	224742.99	720547738	8869	336378000	2977.80	6732.20	2974.70	6732.20
2006	50977000	63662000	4.76	105476000000	78830000000	636452.00	533649.0	298379912	13095.40	718920.00	229199.99	725530965	8860	365244000	3199.40	7110.20	3199.60	7110.20
2007	55978000	64029000	4.72	111102000000	83421000000	651311.00	578357.0	301139947	13857.90	733962.00	233745.37	744302310	9059	390329000	3380.80	7486.30	3381.30	7486.30
2008	57942000	63563000	4.68	119217000000	87376000000	578211.00	662432.0	307212123	14580.00	815237.00	238380.90	701779551	9935	408461000	3574.10	7769.40	3567.50	7769.40
2009	54962000	61419000	5.41	106285000000	81168000000	647401.00	492345.0	307212123	14260.00	838670.00	242184.58	679423408	9476	430951000	3781.20	8008.70	3780.20	8008.70
2010	59796000	60271000	4.7	110313000000	83057000000	679663.01	499762.9	309326225	14958.30	827860.00	245202.46	720497000	9518	442632000	3926.60	8254.20	3966.70	8254.20
2011	62711000	58497000	4.39	117327000000	86248000000	718507.14	508377.4	311587816	15553.80	866745.94	253114.18	730796000	9518	470422000	4076.80	8467.00	3954.20	8467.00
2012	66969000	60723000	4.61	126573000000	91919000000	765626.13	518404.5	313914040	162444.60	920214.00	257860.73	736617000	9518	499951000	4126.10	8895.10	4179.81	8895.10
2013	68480031	60672936	4.58	130045427405	94273126545	823271.75	530106.4	316716026	204439.04	978104.96	262974.50	742891856	9574	524645071	4371.65	9365.96	4438.77	9365.96