Governments' Roles for Supporting Long-Term Development of China's Economy[*]

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1. Introduction

The collapse of the East-West confrontation regime shifted the national interests of the major powers from military capability to economic competitiveness. In the coming age, China will have in this context much bearings, for its size, upon the economic security of the world, in spite of counter arguments like the one by Gerald Segal [5]. The decision makers of the China's government seem to have a clear understanding of their situation that the future investment required for the smooth development of their economy is both a lure to potential foreign investors and quite a burden to themselves at the same time. If China fails in maintaining a sufficiently high rate of growth, it will have to face severe social and political instability in the domestic arena, and cause proportional insecurity in the international economy.

Keeping such a perspective in mind, this paper first presents an estimation of the required capital investment for China to attain a per capita income of, say $3,000 in the year 2025 vis-à-vis the changes in the industrial sector composition. Then the paper discusses its implication on the roles of the concerned governments to facilitate a desirable economic environment in the international arena, together with a sketch of the strategy to be taken for the implementation of the development-cum-interdependent regime in the new world community. The proposed regime is then placed in a historical perspective to illustrate its legitimacy in the context of the world welfare maximization, i.e., a shift from free trade to freer production factor mobility across the national borders.

2. Necessary Conditions for Long-Term Development of China's Economy Derived with a PERT- Econometric Model[i]

Capital investment is the single most important determinant of long-term economic development. China's economy is no exception to this empirically established proposition. Without doubt China's development strategy will henceforth focus on securing smooth capital financing. What amount of investment rate will be needed to support its development to three thousand dollars per capita, say, from the initial $640 in 1995 in thirty years? How will the industrial composition change over this period?

We used a PERT-econometric model of the People's Republic of China (PRC) economy to answer these questions. For the concept, examples, and applications of the PERT-econometric model, see the references shown in note i.

The result shows that in total the required capital investment will come up to 22 trillion U.S. dollars. The absolute size of this economy at the targeted end year will be US$4.6 trillion, which is comparable to the current Japanese economy.

This derivation is based on several assumptions: 1) The capital coefficients in the respective industrial sectors will remain the same as in 1995 when the initial conditions are set for this calculation; 2) The prices of the industrial products are doubled and those of primary products are halved for the initial year so as to adjust the price system to internationally comparable basis; 3) The overall average depreciation rate is fixed at five percent in the standard simulation case, though it is subjected to variation in the sensitivity test specifically with respect to capital requirement calculation.

Other minor assumptions, such as the population growth rate, are shown in the assignment of the relevant parameter values in the computer output report format in the Appendix..

Main findings from the model operation are as follows. Firstly the average real GDP growth rate required to realize the preset object of attaining $3,000 in 30 years from 1995 is over 6.5%, which is only slightly lower than the targeted growth rate of 7.2% in the current 2,000-2,010 period Long-Term Development Plan of the PRC. Secondly, the industrial sector composition changes dramatically; the agriculture, forestry and fishery sector declines to only 6.5% in 2025 from the initial 20.6.[ii] The share of the manufacturing sector markedly increases from 33.5% to 51 in the same period, and that of financial and realty almost doubles from 3.2 to 5.9. The tertiary sector as a whole, inclusive of energy and public utilities, other services and government, does not change much, though, keeping roughly one third of the GDP. Notable changes take place in the energy sector (electricity, gas, and water supply) whose share almost triples from the initial 3.1% to 8.9, and in transportation and telecommunications that declines from 5.6 to 3.5%. As a consequence, the overall share of the

social overhead capital (SOC) services increases to 12.4% from 8.6, which will certainly places much load to the required capital investment. In most of the successful Asian economies, the increase in the SOC services share has been 2 to 4%. The case of PRC is placed at the highest in the required accumulation of SOC.

The assumed capital-output ratio (COR) for the agriculture, fishery and forestry is 1.76, which is the smallest of all, while those for manufacturing, energy and public utilities, and transportation and telecommunications are 2.25, 7.75 and 2.78, respectively. There is a strong reason to believe that the COR for the transportation sector is an underestimation because this parameter is based upon the performance in the past when the transportation investment was concentrated on relatively cheaper road construction. The future investment will be directed to railways, air transportation facilities and seaports that are much more capital intensive than roads. In the current Five-Year Development Plan, the expected growth rate of the transportation investment is only 4.5% while the real GDP growth rate is 8%.

The aggregate COR in the future will become greater, partly because of increasing shares of the high-COR sectors as explained above, and partly because of the necessary adjustments in the COR for certain sectors like the transportation sector. These may be summarized as a product mix adjustment within and inter sectors.

The required capital investment for this development process can only be supported with an investment-GDP ratio (investment rate) greater than 30.9%. The feasibility of this investment rate may be judged by the movement of capital fund supply from three sources: domestic savings, foreign direct investment (FDI), and international governmental aids through multilateral organizations such as the World Bank, or the Asian

Development Bank. The domestic saving rate may become lower, at least in an early stage of the planning period, because of possible higher propensity to consume triggered by demonstration effect. An advantage of the current PRC is that it has a reliable overseas Chinese investors to supply a significant portion of the total investment, as long as the investment environment remains favorable to foreign investment. These feasibility conditions will render tremendous impact upon the foreign policies of the People's Republic of China. This aspect will be analyzed later in this paper.

The above-described results depend on several key assumptions. First of all, the assumed depreciation rate of 5% in the above-described standard case is not small when compared with that in other developing countries. However, the future China's depreciation rate may turn out to be higher in the due process of development. An example of such possibilities is the well-noted destruction of the traditional sectors through modernization of the basic production processes. In PRC, the state-owned big enterprises are still using, especially in the northeastern part of it, remains of old heavy industrial capital facilities that are inevitable to be exposed to severe market competition and consequentially removed from the production structure. If the depreciation rate becomes higher by one percent to make it 6% instead, for instance, the required investment rate becomes 32.5% or 2.5% higher than that in the case of 5%. These will make the necessary total investment to be over $21 trillion.

In addition, the assumed macro COR of 2.6 to 2.8 depending on the simulation case, is markedly lower than those in most of the other Asian economies where usually it is around 3.5 or even higher. In view of the PRC economy transforming itself into an internationally comparable structure due to ever growing globalization of its economic transactions, industrial technologies will converge, more or less, to international standards, the COR will tend to be much higher than that assumed in the model simulation. This will make the required investment higher in proportion to the increasing COR. On the other hand, COR tends to decline at a certain development stage due to increasing efficiency. This will lessen the investment load considerably, although this aspect is not incorporated into the present model analyses.

A critical issue in the development of the Chinese economy will be labor absorption capacity. Although our model has not incorporated the labor coefficients yet, a separate econometric model of the PRC economy[iii] indicates that the current mode of development lacks the labor absorption capacity to match the newly incoming young labor force and causes increasing unemployment, disguised or not. Thus, the changes in sectoral composition in favor of manufacturing and other modern sectors can only be accommodated by intra-sectoral labor intensive technological changes. Accelerated high-tech-led industrialization may create labor market instability, sooner or later.

The most important condition for sustainable long-term development of the Chinese economy derived from the model simulation seems, thus, to be an uninterrupted inflow of capital. This point has been expressed by Chinese government officials repeatedly, as Mr. Li remarked at the Twentieth China-Japanese Annual Conference on Economy and Knowledge held in Beijing in 1998.

In the Ninth Five Year Plan, the expected investment rate is 30%, which is almost equivalent to the necessary condition derived by our model. This implies that a considerable portion of the capital fund must be supplied from foreign entities. As a matter of fact, the local government authorities expressed their expectation, or a hope, that around 30% of the total investment in their

respective development plans will be financed by FDI.

3. Roles of Government in the Long-Term Chinese Economic Development

Rationale of Governments' Initiatives

It will be indispensable, for China to meet the necessary conditions, that the Chinese government will consistently adopt friendly international relations in the international arena, and maintain social and political stability in the domestic arena that in turn indispensably depends upon smooth growth. As a matter of fact, the Chinese government seems to have been trying to establish favorable economic environment within and without. The China's government has to provide a favorable environment for FDI but also should be met by foreign partners' cooperation, for, if the Chinese development will be successful, the capital investment burden of twenty trillion U.S. dollars to China will be at the same time a remarkable investment opportunity to foreign investors as well. Furthermore, smooth development of the Chinese economy will be a prerequisite, in turn, of economic security of the concerned countries. This mutual potential benefit deserves orchestrated international cooperation involving all the open economies of the world. A logical extension of such a strategy will be the institutionalization of East Asia, especially the Northeast Asian sub-region. Such an idea in the political arena has already been proposed as the Northeast Asian Regional Forum. Economic advantages of international cooperation in this subregion have been claimed in broad terms on many occasions, and concretely regarding specific fields of activities in regional development studies.[iv] The East Asian region will benefit from the sovereign governments' initiative to establish a comprehensive international institution or specific institutions to provide bases of international cooperation. There are observed a lot of economic potential and it is only the undeniable will of the governments that is lacking in the accelerated development of this regional economy.

Strategy of International Cooperation

In view of economic complementarities spreading over a multiple number of countries in this subregion, vis-à-vis stumbling blocks of narrow and short-sighted view of national interests in implementing cooperation among the concerned countries, the following measures are strongly recommendable to the sovereign governments comprising this subregion. The concerned governments should:

1) Agree upon the principle of development-cum-interdependent mechanism as the leading concept of forming the new international community in the coming 21st century. The ideal of this strategy is to mitigate economic poverty and inequality causing regional conflicts. It should be noted that most of the military measures failed in realizing the intended stability.

2) Take actions to implement subregional standard of international economic transactions, including cross-border procedures, FDI regulations, and the legal status of special economic zones within this subregion to provide reliable investment environment.

3) Establish an international institution to cope with new threats, including drug transactions and organizational crimes, to strengthen mutual securities.

4) Introduce a subregional accounting

monetary unit to provide economic actors in this region with financial security. Conversion of it into a tangible money is not discouraged, but the idea of implementing the accounting monetary unit stems only from the consideration of feasibility and acceleration of the shared sense of community.

General Observations in Historical Perspective

The twentieth world has gone through marked liberalization and expansion of international trade of products, being led by the Ricardian theorem of 'free trade maximizes the world welfare.' The collapse of the basic structure of East-West military confrontation toward the end of the twentieth century will drastically change the basic structure of the 21st world economy, for it has come to enable the sovereign countries to exploit otherwise unavailable external economies through freer access to foreign production factors. This will promote international cooperation for materializing complementarities of production factors endowed across the national borders, though not fully, but at least at a greater degree. The new century will be led, therefore, by the spirit of the Le Chatelier principle to promote international transactions of productive factors, tangible or intangible, including knowledge, technologies, and other resources. It will become the primary role of the central governments, therefore, to provide adequate institutional, legal, technical, and even more of philosophical foundation toward this end.

Appendix. Development Path of the China's Economy to $3,000 Per Capita in 2,25
— PERT-Econometric Model Projection —

The projection of the China's economic development was run as shown in the following table to derive the required investment, together with the changes in the sector composition. For the explanation of the PERT-econometric model, see the references [2]. The notation is given below.

Notations for the Appendix

YR$95   :GDP in the U.S. dollars at '95 prices million dollars);
N   : Population (million persons);
PCY   : per capita GDP;
KLGD governmental long-term capital loans outstanding;
Sxxx   : GDP share of sector xxx;
AYxxx: total-controlled sectoral GDP;
Krqxxx: capital stock requirement in sector xxx;
Krq: total capital requirement;
K: capital stock made available by the preset investment rate; d: depreciation;
I:investment; and,
EOCSUM: investment on the economic overhead capital services, where xxx's are the sector code as follows:
Min: mining; aff: agriculture, fishery, and forestry; mnf: manufacturing; con: construction, egw: electricity, gas, and water supply; tc: telecommunications and transportation, trade: trade, hotels and restaurants; br: banking and real estate; gov: government; others: others; ind: industrial sectors; nonp: non-primary sectors.

References
[1] Makoto Nobukuni, "Required Capital Investment for Tumen River Area Develipment:An Application of the PERT Develipment Planning Model " Atlkantic Economic Journal,August 1996.
[2] Nobukuni, et al., "Economic Develipment and Overhead Capital Services: PERT-Econometrifc Approach to Develipment Planning," Studies of Regional Science of theNo.2,1993.
[3] Nobukuni,Makoto,and others, "Basic Macro Balances on Chinese Economy in the Year 2000:Conclusions Based on an Econometric Forecast " paper presented at the World Conference of theInternational Regional Science Association, Tokyo, may 1996.
[4] Nobukuni,Makoto,and K.Kawamura, "Optimum Transportation Program for NortheastChina Using Tumen Area Sea Ports: An Assessment of International Cooperation UsingLe Chatelier Principle," Regional Studies,Vol.28, No.1,Regional Science Association
[5] Gerald Segal "Does China Matter? " Foreign Affairs September/October 1999.

i For the concept and general framework of the PERT— econometric model, see Nobukuni, et. al., "Economic Development and Overhead Capital Services: PERT-Econometric Approach to Development Planning," Studies in Regional Science, Vol.23, No.2, Dec. 1993, pp.19-36, and for an application to a real development planning, refer to Makoto· Nobukuni, "Required Capital Investment for Tumen River Area Development: An Application of the PERT Development Planning Model," Atlantic Economic Journal, Aug., 1996.
ii Due to relative price adjustment, the industrial compositions differ from the official statistics. The shares of the primary sectors are much higher, and those of the industrial sectors are fairly smaller than the official statistics indicate.
iii Makoto Nobukuni, and others, "Basic Macro Balances on Chenese Economy in the Year 2,000;Conclusions Based on an Econometric Forecast," read at the World Conference of the International Regional Science Association, Tokyo, May 1996.
iv See Nobukuni, Makoto, and K. Kawamura, "Optimum Transportation Program for Northeast China Using Tumen Area Sea Ports: An Assessment of International Cooperation Using Le Chatelier Principle," Regional Studies, Vol. 28, No.1, Regional Science Association, Japan, 1998.

Table. PRC Economy Development Path to $3,000 Per Capita in 2,025
---PERT-Econometric Model Projection---

Area and sqr/   3098.387
Wnorm   : 0.140   I/Y=0.32
PCY_ey   : 3000.0 d(%)=5.0
Growth of N   (%): 0.80
Growth of Ymin (%): 3.00
Growth of KLGD (%): 4.00
Growth of YR85D (%): 6.50

step	Year	YR85D	91price	AF	N	PCY	KLGD	Smin	Saff	Smnf	Scon	Segw
0	1995	697612	697612	1.000	1211.2	576	118090	5.19	20.59	33.54	6.56	3.07
1	1996	742952	745729	0.996	1220.9	609	122814	5.00	19.80	34.24	6.65	3.23
2	1997	791239	797658	0.992	1230.6	643	127726	4.82	19.04	34.94	6.74	3.39
3	1998	842665	853711	0.987	1240.5	679	132835	4.64	18.30	35.63	6.82	3.57
4	1999	897433	914226	0.982	1250.4	718	138149	4.46	17.58	36.31	6.90	3.74
5	2000	955760	979568	0.976	1260.4	758	143675	4.29	16.89	36.99	6.96	3.93
6	2001	1017878	1050136	0.969	1270.4	801	149422	4.12	16.22	37.65	7.02	4.12
7	2002	1084034	1126358	0.962	1280.6	847	155398	3.96	15.57	38.32	7.07	4.32
8	2003	1154489	1208701	0.955	1290.8	894	161614	3.80	14.95	38.97	7.12	4.53
9	2004	1229524	1297672	0.947	1301.1	945	168079	3.64	14.34	39.61	7.15	4.74
10	2005	1309435	1393819	0.939	1311.5	998	174802	3.49	13.76	40.25	7.18	4.97
11	2006	1394540	1497738	0.931	1322.0	1055	181794	3.35	13.19	40.88	7.20	5.20
12	2007	1485176	1610077	0.922	1332.6	1115	189066	3.21	12.65	41.51	7.21	5.44
13	2008	1581703	1731536	0.913	1343.2	1178	196629	3.07	12.13	42.12	7.22	5.68
14	2009	1684503	1862880	0.904	1354.0	1244	204494	2.94	11.62	42.73	7.22	5.94
15	2010	1793985	2004935	0.895	1364.8	1314	212673	2.81	11.13	43.33	7.21	6.21
16	2011	1910583	2158604	0.885	1375.7	1389	221180	2.69	10.66	43.93	7.20	6.48
17	2012	2034759	2324863	0.875	1386.7	1467	230028	2.58	10.21	44.51	7.18	6.77
18	2013	2167005	2504777	0.865	1397.7	1550	239229	2.46	9.77	45.09	7.16	7.06
19	2014	2307846	2699505	0.855	1408.9	1638	248798	2.35	9.35	45.66	7.13	7.37
20	2015	2457841	2910305	0.845	1420.2	1731	258750	2.25	8.94	46.23	7.09	7.69
21	2016	2617585	3138549	0.834	1431.5	1829	269100	2.15	8.55	46.78	7.05	8.02
22	2017	2787712	3385733	0.823	1443.0	1932	279864	2.05	8.18	47.33	7.00	8.36
23	2018	2968895	3653487	0.813	1454.5	2041	291058	1.96	7.81	47.87	6.95	8.71
24	2019	3161854	3943589	0.802	1466.1	2157	302701	1.87	7.47	48.40	6.89	9.07
25	2020	3367355	4257982	0.791	1477.8	2279	314809	1.78	7.13	48.93	6.84	9.45
26	2021	3586211	4598787	0.780	1489.6	2407	327401	1.70	6.81	49.44	6.77	9.84
27	2022	3819292	4968330	0.769	1501.5	2544	340497	1.62	6.50	49.95	6.70	10.24
28	2023	4067521	5369153	0.758	1513.5	2687	354117	1.54	6.20	50.44	6.63	10.65
29	2024	4331884	5804047	0.746	1525.6	2839	368282	1.47	5.91	50.93	6.56	11.08
30	2025	4613429	6276076	0.735	1537.8	3000	383013	1.40	5.64	51.40	6.48	11.52

step	Year	Stc	Strade	Sbr	Sgov	Sothers	Sind	Snonp	Snaff	Ymin	Yaff	Ymnf
0	1995	5.56	8.74	3.22	3.29	10.25	57.46	74.22	79.41	36224	143604	233976
1	1996	5.49	8.63	3.29	3.24	10.42	58.24	75.20	80.20	37311	147649	255361
2	1997	5.43	8.50	3.36	3.20	10.58	59.01	76.14	80.96	38430	151852	278700
3	1998	5.36	8.38	3.44	3.15	10.72	59.76	77.06	81.70	39583	156217	304172
4	1999	5.29	8.25	3.51	3.10	10.84	60.50	77.96	82.42	40770	160750	331973
5	2000	5.22	8.13	3.58	3.05	10.96	61.23	78.82	83.11	41994	165457	362314
6	2001	5.15	8.00	3.66	3.00	11.06	61.95	79.66	83.78	43253	170342	395429
7	2002	5.07	7.86	3.73	2.95	11.14	62.65	80.47	84.43	44551	175411	431570
8	2003	5.00	7.73	3.81	2.90	11.21	63.35	81.26	85.05	45887	180669	471014
9	2004	4.92	7.60	3.88	2.85	11.26	64.03	82.02	85.66	47264	186120	514063
10	2005	4.84	7.47	3.95	2.79	11.29	64.71	82.75	86.24	48682	191771	561047
11	2006	4.77	7.33	4.03	2.74	11.31	65.38	83.46	86.81	50142	197625	612325
12	2007	4.69	7.20	4.10	2.69	11.31	66.04	84.14	87.35	51647	203687	668290
13	2008	4.61	7.06	4.18	2.64	11.29	66.69	84.80	87.87	53196	209963	729370
14	2009	4.53	6.93	4.25	2.58	11.26	67.35	85.44	88.38	54792	216457	796032
15	2010	4.45	6.79	4.33	2.53	11.20	67.99	86.05	88.87	56436	223174	868787
16	2011	4.36	6.66	4.41	2.48	11.13	68.63	86.65	89.34	58129	230118	948191
17	2012	4.28	6.53	4.48	2.43	11.04	69.27	87.22	89.79	59873	237294	1034853
18	2013	4.20	6.39	4.56	2.37	10.93	69.91	87.77	90.23	61669	244706	1129436
19	2014	4.12	6.26	4.63	2.32	10.80	70.54	88.30	90.65	63519	252359	1232663
20	2015	4.04	6.13	4.71	2.27	10.65	71.17	88.81	91.06	65425	260258	1345325
21	2016	3.96	6.00	4.79	2.22	10.48	71.81	89.30	91.45	67387	268406	1468284
22	2017	3.88	5.87	4.87	2.17	10.30	72.44	89.77	91.82	69409	276810	1602480
23	2018	3.80	5.74	4.95	2.12	10.09	73.07	90.23	92.19	71491	285473	1748942
24	2019	3.73	5.61	5.03	2.07	9.86	73.71	90.67	92.53	73636	294402	1908791
25	2020	3.65	5.49	5.11	2.02	9.62	74.34	91.09	92.87	75845	303601	2083249
26	2021	3.57	5.36	5.19	1.98	9.35	74.98	91.49	93.19	78120	313077	2273651
27	2022	3.49	5.24	5.27	1.93	9.07	75.62	91.88	93.50	80464	322838	2481457
28	2023	3.42	5.12	5.35	1.88	8.77	76.26	92.26	93.80	82878	332890	2708254
29	2024	3.34	5.00	5.43	1.83	8.45	76.90	92.62	94.09	85364	343243	2955781
30	2025	3.27	4.88	5.51	1.79	8.11	77.55	92.96	94.36	87925	353907	3225931

step	Year	Ycon	Yegw	Ytc	Ytrade	Ybr	Ygov	Yothers	Yind	AYmin	AYaff	AYmnf
0	1995	45736	21412	38754	61000	22441	22931	71534	400878	36224	143604	233976
1	1996	49612	24077	40967	64324	24537	24178	77713	434341	37172	147099	254410
2	1997	53779	27075	43306	67834	26833	25493	84356	470694	38121	150630	276457
3	1998	58256	30445	45778	71543	29347	26879	91491	510194	39071	154196	300237
4	1999	63062	34235	48392	75460	32101	28341	99143	553121	40022	157797	325875
5	2000	68218	38497	51155	79598	35117	29882	107338	599781	40973	161435	353508
6	2001	73746	43289	54075	83969	38422	31506	116105	650507	41925	165110	383282
7	2002	79670	48677	57162	88586	42042	33220	125468	705665	42877	168820	415353
8	2003	86014	54737	60426	93463	46010	35026	135455	765654	43829	172565	449888
9	2004	92805	61551	63876	98615	50358	36931	146089	830910	44782	176346	487067
10	2005	100071	69213	67523	104056	55124	38939	157393	901910	45735	180161	527080
11	2006	107841	77828	71378	109803	60349	41056	169390	979176	46688	184008	570134
12	2007	116147	87517	75453	115873	66077	43289	182097	1063280	47640	187886	616448
13	2008	125022	98411	79761	122283	72357	45643	195530	1154847	48593	191795	666256
14	2009	134501	110662	84315	129052	79245	48125	209699	1254561	49546	195731	719809
15	2010	144621	124437	89129	136200	86800	50742	224610	1363174	50498	199693	777377
16	2011	155422	139927	94218	143747	95088	53501	240262	1481506	51450	203678	839245
17	2012	166946	157346	99597	151716	104181	56410	256647	1610458	52402	207684	905721
18	2013	179236	176933	105283	160129	114159	59478	273749	1751017	53353	211707	977130
19	2014	192340	198958	111294	169010	125109	62712	291540	1904266	54303	215746	1053822
20	2015	206308	223724	117649	178386	137128	66122	309980	2071391	55253	219796	1136168
21	2016	221191	251574	124366	188282	150323	69718	329018	2253696	56202	223854	1224565
22	2017	237046	282891	131466	198727	164812	73509	348584	2452611	57149	227917	1319434
23	2018	253932	318106	138972	209750	180722	77506	368592	2669703	58095	231981	1421225
24	2019	271910	357705	146907	221384	198197	81720	388938	2906696	59039	236043	1530412
25	2020	291047	402233	155294	233661	217393	86164	409494	3165484	59981	240098	1647503
26	2021	311413	452304	164160	246617	238484	90850	430110	3448146	60920	244143	1773031
27	2022	333082	508608	173533	260288	261661	95790	450611	3756967	61855	248174	1907564
28	2023	356131	571921	183440	274713	287133	100999	470793	4094460	62786	252188	2051699
29	2024	380644	643115	193914	289935	315134	106491	490427	4463388	63712	256181	2206064
30	2025	406707	723172	204985	305997	345919	112281	509252	4866792	64632	260151	2371323

step	Year	AYcon	AYegw	AYtc	AYtrade	AYbr	AYgov	AYothers	Krqmin	Krqaff	Krqmnf	Krqcon
0	1995	45736	21412	38754	61000	22441	22931	71534	156850	252743	526446	46651
1	1996	49428	23988	40814	64084	24446	24088	77424	160954	258895	572422	50416
2	1997	53347	26857	42957	67289	26617	25288	83678	165063	265109	622029	54414
3	1998	57502	30051	45186	70617	28967	26531	90307	169177	271384	675533	58652
4	1999	61903	33606	47503	74074	31511	27820	97322	173293	277724	733219	63141
5	2000	66560	37561	49911	77663	34264	29155	104730	177413	284126	795393	67891
6	2001	71480	41959	52414	81390	37242	30539	112539	181534	290593	862385	72910
7	2002	76676	46848	55015	85258	40463	31971	120754	185657	297123	934544	78209
8	2003	82156	52282	57716	89272	43946	33455	129380	189781	303715	1012248	83799
9	2004	87931	58318	60522	93436	47713	34991	138417	193906	310369	1095900	89690
10	2005	94013	65022	63435	97756	51787	36582	147865	198031	317083	1185931	95893
11	2006	100411	72466	66460	102237	56190	38227	157719	202157	323854	1282802	102419
12	2007	107137	80728	69600	106884	60951	39931	167971	206282	330680	1387007	109280
13	2008	114204	89895	72859	111701	66096	41693	178610	210408	337559	1499075	116488
14	2009	121622	100065	76242	116695	71657	43517	189619	214532	344487	1619571	124055
15	2010	129405	111344	79751	121869	77668	45403	200977	218656	351459	1749098	131993
16	2011	137565	123850	83392	127231	84163	47354	212656	222778	358473	1888302	140316
17	2012	146114	137712	87169	132784	91181	49371	224622	226899	365523	2037872	149036
18	2013	155066	153073	91086	138535	98764	51457	236834	231018	372605	2198542	158167
19	2014	164435	170092	95147	144489	106957	53613	249242	235133	379712	2371099	167723
20	2015	174233	188942	99358	150652	115809	55842	261788	239246	386840	2556378	177718
21	2016	184476	209816	103722	157029	125371	58145	274405	243354	393983	2755271	188166
22	2017	195177	232924	108245	163626	135701	60525	287013	247456	401134	2968728	199080
23	2018	206350	258499	112931	170447	146858	62983	299525	251552	408287	3197756	210477
24	2019	218010	286797	117785	177499	158908	65521	311839	255639	415435	3443428	222370
25	2020	230170	318099	122812	184787	171922	68142	323842	259717	422572	3706881	234773
26	2021	242845	352714	128015	192316	185974	70846	335407	263782	429692	3989320	247702
27	2022	256049	390981	133399	200090	201146	73636	346397	267832	436787	4292019	261170
28	2023	269795	433271	138969	208115	217524	76514	356660	271863	443851	4616322	275191
29	2024	284096	479993	144729	216395	235202	79480	366033	275873	450879	4963645	289777
30	2025	298963	531590	150681	224933	254279	82536	374342	279857	457865	5335476	304942

step	Year	Krqegw	Krqtc	Krqtrade	Krqbr	Krqgov	Krqothers	Krq	K	Krq/YR85D	KLGD/K[%]	drq
0	1995	165943	107736	269010	11221	82093	204587	1823280	1823280	2.614	6.477	
1	1996	185905	113463	282611	12223	86235	221431	1944556	1992149	2.617	6.165	91164
2	1997	208140	119421	296743	13309	90529	239318	2074074	2169475	2.621	5.887	97228
3	1998	232896	125616	311422	14484	94981	258278	2212423	2355934	2.626	5.638	103704
4	1999	260447	132058	326666	15756	99595	278340	2360238	2552239	2.630	5.413	110621
5	2000	291097	138753	342496	17132	104376	299527	2518203	2759143	2.635	5.207	118012
6	2001	325182	145711	358929	18621	109329	321860	2687053	2977443	2.640	5.018	125910
7	2002	363074	152941	375986	20231	114458	345356	2867579	3207983	2.645	4.844	134353
8	2003	405184	160450	393687	21973	119770	370025	3060634	3451655	2.651	4.682	143379
9	2004	451966	168250	412054	23857	125269	395872	3267133	3709406	2.657	4.531	153032
10	2005	503923	176349	431106	25893	130962	422893	3488064	3982238	2.664	4.390	163357
11	2006	561610	184759	450867	28095	136854	451075	3724492	4271215	2.671	4.256	174403
12	2007	625639	193488	471358	30475	142952	480397	3977561	4577466	2.678	4.130	186225
13	2008	696689	202549	492603	33048	149262	510825	4248505	4902188	2.686	4.011	198878
14	2009	775506	211952	514624	35829	155790	542311	4538656	5246655	2.694	3.898	212425
15	2010	862918	221709	537444	38834	162543	574795	4849448	5612217	2.703	3.789	226933
16	2011	959836	231831	561087	42081	169527	608197	5182427	6000310	2.712	3.686	242472
17	2012	1067265	242330	585578	45590	176749	642419	5539261	6412460	2.722	3.587	259121
18	2013	1186316	253219	610940	49382	184216	677345	5921749	6850289	2.733	3.492	276963
19	2014	1318212	264509	637198	53479	191936	712832	6331833	7315521	2.744	3.401	296087
20	2015	1464302	276215	664376	57905	199915	748714	6771608	7809989	2.755	3.313	316592
21	2016	1626073	288348	692498	62686	208160	784797	7243336	8335645	2.767	3.228	338580
22	2017	1805161	300922	721589	67850	216679	820858	7749458	8894561	2.780	3.146	362167
23	2018	2003369	313949	751673	73429	225478	856642	8292612	9488947	2.793	3.067	387473
24	2019	2222678	327443	782772	79454	234566	891860	8875646	10121148	2.807	2.991	414631
25	2020	2465269	341416	814912	85961	243947	926187	9501636	10793665	2.822	2.917	443782
26	2021	2733535	355882	848113	92987	253629	959264	10173905	11509156	2.837	2.845	475082
27	2022	3030102	370851	882398	100573	263618	990695	11270450	12270450	2.853	2.775	508695
28	2023	3357854	386335	917787	108762	273919	1020047	11671931	13080560	2.870	2.707	544802
29	2024	3719944	402346	954300	117601	284538	1046854	12505758	13942691	2.887	2.641	583597
30	2025	4119826	418893	991954	127139	295479	1070618	13402049	14860257	2.905	2.577	625288

step	Year	drqSUM	d	dSUM	Irq	IrqSUM	I	ISUM	EOCSUM	KLGD/I	KLGD
0	1995										
1	1996	91164	91164	91164	212441	212441	260033	260033	39373		
2	1997	188392	99607	190771	226745	439186	276934	536967	82534		
3	1998	292095	108474	299245	242053	681239	294933	831900	129863		
4	1999	402717	117797	417042	258436	939675	314101	1146001	181781		
5	2000	520729	127612	544654	275977	1215652	334516	1480517	238752		
6	2001	646639	137957	682611	294760	1510412	356257	1836775	301288		
7	2002	780991	148872	831483	314879	1825291	379412	2216187	369954		
8	2003	924370	160399	991882	336433	2161725	404071	2620258	445374		
9	2004	1077402	172583	1164465	359531	2521255	430333	3050591	528238		
10	2005	1240759	185470	1349935	384288	2905544	458302	3508894	619305		
11	2006	1415162	199112	1549047	410831	3316374	488089	3996982	719415		
12	2007	1601386	213561	1762608	439293	3755667	519812	4516794	829492		
13	2008	1800264	228873	1991481	469823	4225490	553596	5070390	950559		
14	2009	2012690	245109	2236591	502576	4728067	589576	5659966	1083741		
15	2010	2239623	262333	2498923	537725	5265791	627895	6287861	1230283		
16	2011	2482095	280611	2779534	575451	5841243	668704	6956565	1391553		
17	2012	2741216	300016	3079550	615955	6457198	712165	7668731	1569065		
18	2013	3018179	320623	3400173	659451	7116649	758452	8427182	1764484		
19	2014	3314267	342514	3742687	706171	7822820	807746	9234928	1979648		
20	2015	3630858	365776	4108463	756367	8579187	860245	10095173	2216580		
21	2016	3969439	390499	4498963	810308	9389495	916155	11011328	2477510		
22	2017	4331606	416782	4915745	868289	10257784	975699	11987027	2764893		
23	2018	4719079	444728	5360473	930627	11188411	1039113	13026140	3081432		
24	2019	5133709	474447	5834920	997664	12186075	1106649	14132789	3430102		
25	2020	5577491	506057	6340978	1069772	13255847	1178574	15311363	3814171		
26	2021	6052573	539683	6880661	1147351	14403199	1255174	16566537	4237236		
27	2022	6561268	575458	7456119	1230834	15634033	1336752	17903289	4703244		
28	2023	7106071	613522	8069641	1320690	16954723	1423632	19326922	5216527		
29	2024	7689667	654028	8723669	1417423	18372146	1516159	20843081	5781838		
30	2025	8314955	697135	9420804	1521579	19893725	1614700	22457781	6404381	0.012	382948.8186