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An Investigation into the Relationship between Agricultural Production and Formal Credit Supply in Nigeria

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Abstract Nigerian agriculture by nature is essentially traditional and subsistence. Limited access to credit facilities has been implicated as hinderance to the growth and productivity of the agricultural sector. Thus, the need arises for the provision of credit to the majority of Nigerian farmers. To increase farmers' access to credit from formal sources, the Federal Government of Nigeria established the Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1977, with the purpose of increasing the level of bank credit to the agricultural sector through the provision of guarantee in respect of loans granted by any bank for agricultural purposes. This paper set out to investigate the relationship between agricultural production and formal credit supply in Nigeria. The methodology employed in the study involved the development and estimation of three simple regression models relating agricultural output with formal credit while holding other explanatory variables constant. Findings of the paper indicates that formal credit is positively and significantly related to the productivity of the crop, livestock and fishing sectors of Nigerian agriculture. Based on the findings it is recommended that government should continue to encourage the expansion of formal credit sources to reach as much farmers as possible.

Keywords Formal Credit, Agricultural Output, ACGSF, Nigeria

1. Introduction

Nigerian agriculture is essentially traditional and subsistence in nature. Given the requirement of finance in the agricultural sector, very few farmers will have capital of their own to invest in agriculture. Most farm families hardly have any savings to plough back into production, considering the pattern of their income and expenditure. Limited access to credit facilities has been implicated as hinderance to the growth and productivity of the agricultural sector (Ammani et al, 2010). Thus, the need arises for the provision of credit to the majority of Nigerian farmers.

The importance of credit to agricultural development cannot be overemphasised. Credit enables farmers to advantegoeusly use inputs and factors of production, by granting farmers more access to resources through the removal of financial constraints. The traditional argument for the provision of agricultural credit is that additional capital can be temporarily used to enhance the level of household's productive and physical capital (Eswaram and Kotwal, 1990). The provision of credit will reduce the costs of capital intensive technology and assets relative to family labour. Thus, instead of growing low yielding local crops, for example, access to credit may allow an incresed use of improved seeds and fertilizers leading to higher crop output per unit of labour and land (Feder et al, 1985). This may in turn encourage the adoption of labour-saving technologies, such as animal traction in crop production (Zeller, 1999). Carter (1989) argued that credit could lead to efficient resource allocation, increase farmers' technical efficiency and, by implication, increase farmers' profitability. Qureshi et al (1996) observed that an increase in credit to agriculture will lead to increase food production and farmers' income because as the demand for credit increases, farmers output also increases, resulting in improvement in their well being.

Agricultural credit services are provided by both formal and informal institutions. The informal sector remains the leading provider of agricultural credit. Consequent of their poor resource endowment, most farmers are un-able to meet the stipulated criteria for formal credit especially that of pledging collaterals for loans, which is a basic requirement for credit transactions with formal financial institutions. As a result, poor farmers are left with no option other than to source credit from informal sources, which are regarded as exploitative because they mostly charge higher interest rates, much to the disadvantage of the farmers. In fact, according to the World Bank (1994) and (2000), the three most important

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sources of rural credit in Nigeria are all informal: (i) rotating savings and credit associations (RoSCAs) locally known as "adashi" or "esusu", (ii) family, and (iii) friends. Commercial banks came fourth, with only 11 percent of the sampled rural dwellers sourcing credit from them.

To increase farmers' access to credit from formal sources, the then Federal Military Government of Nigeria established the Agricultural Credit Guarantee Scheme Fund (ACGSF) under the Agricultural Credit Guarantee Scheme Fund Decree 1977. The purpose of the Fund is to increase the level of bank credit to the agricultural sector through the provision of guarantee in respect of loans granted by any bank for agricultural purposes. The Agricultural purposes in respect of which loans can be guaranteed by the fund are those connected with:- (a) establishment or management of plantation for the production of rubber, oil palm, cocoa, coffee, tea and similar crops; (b) The cultivation or production of cereal crops, tubers, fruits of all kinds, cotton, beans, groundnuts, sheanuts, benniseed, vegetables, pine-apples, bananas and plantains; (c) Animal husbandry, that is to say, poultry, piggery, cattle rearing and the like, fish farming and fish capture; (d) Processing in general where it is integrated with a least 50% of farm output e.g. cassava to gari, oil palm fruit to oil and kernel, groundnut to groundnut oil, etc. (e) Farm machinery and hire services (CBN, 1990).

As observed by Okon and Nkang (2009), the ACGSF is founded on the credit guarantee principle, designed to overcome the reluctance exhibited by financial institutions towards lending to the disadvantaged borrowers targeted by the scheme. Formal financial institutions are averse to lending to these groups of people because of stagnant agricultural markets, high production risk and perceived low profitability of farming, lack of collateral, and their poor financial recording systems (FAO, 2006). Credit guarantees are aimed at stimulating lending to credit-worthy borrowers with feasible projects, who however lack sufficient assets to offer as collaterals (Reichmuth, 1997). Guarantee schemes, leverage additional funds or "additionality" from the financial system because lenders make loans that otherwise would not have been made (Hollinger, 2004).

Have the ACGSF impacted on the availability of formal credit for agricultural production in Nigeria? The main purpose of this paper is to investigate the relationship between agricultural production and formal credit supply in Nigeria.

Specific objectives of the paper are to ascertain:

(i) The relationship between aggregate output of the crop sector and aggregate amount of formal credit to the crop sector.

(ii) The relationship between aggregate output of the livestock sector and aggregate amount of formal credit to the livestock sector.

(iii) The relationship between aggregate output of the fishing sector and aggregate amount of formal credit to the fishing sector.

The following hypotheses were formulated and tested in this study:

(a) There is no significant relationship between aggregate output of the crop sector and aggregate amount of formal credit to the crop sector.

(b) There is no significant relationship between aggregate output of the livestock sector and aggregate amount of formal credit to the livestock sector.

(c) There is no significant relationship between aggregate output of the fishing sector and aggregate amount of formal credit to the fishing sector.

2. Methodology

(a). Conceptual Framework.

Our primary interest is to study the effect of credit on agricultural production. When capital is split up, it takes two forms: equity capital and non-equity capital. Credit is the non-equity capital. The conceptual framework for this study is based on the following arguments: (i) that increase in the productivity of each subsector of the Nigerian agricultural sector, will result from increase in the quantity of credit available to each subsector; (ii) that any change in the quantity of available credit to each agricultural subsector, will indicate a change in the output of the agricultural subsector.

(b). Analytical Framework.

The analytical framework for this study is based on the following assumptions: (a) Credit is the only variable form of capital available for agricultural production, all other factors of production remains constant. (b) ACGSF guaranteed loans are the only source of agricultural credit available to Nigerian farmers. Thus, ACGSF guaranteed credits are taken as proxies to formal agricultural credit in Nigeria. (c) There is no time lag between credit acquisition and credit utilization for agricultural production. (d) Credit acquisition and utilization relate to agricultural production of the same year. (e) There are no changes in the price level. (f) There are no changes in technology. (g) Output of each subsector of the Nigerian agriculture equals the GDP of that subsector. Thus, GDP for each subsector of the Nigerian agricultural sector was taken as proxy for the output of that sector. (i) There exist a linear relationship between agricultural output and credit.

Based on the conceptual framework above, and the foregoing assumptions, the models for this study were developed as follows:

Consider a typical farm with a production function

$$Y=f(X_1 \ldots X_m; Z_1 \ldots Z_n) \quad (1)$$

Where Y is output, x represent variable inputs and z represent fixed and other shifter variables of the function. Ignoring the fixed costs, the production function becomes

$$Y=f(X_1 \ldots X_m) \quad (2)$$

The Production function (2) can be re-written as follows:

$$Y=f(C, L, M, T) \quad (3)$$

Where: C, L, M and T represents capital, labour, management practices and technical progress respectively. Taking credit as the variable of interest for this study, we dropped labour, management practices and technical pro-

gress. The equation then becomes

$$Y=f(C) \quad (4)$$

Assuming capital to consist essentially of savings and credit, i.e C = S + Cr, we can re-write the equation as follows

$$Y=f(S+Cr) \quad (5)$$

Assuming the absence of savings, as is the case with most farmers, credit is taken as the only form of capital available for agricultural production; the function can then be re-written as follows

$$Y=f(Cr) \quad (6)$$

Based on the function (equation 6) developed above, an empirical aggregate model is developed to capture the effects of credit on the aggregate production of the various sub-sectors of Agriculture in Nigeria, leaving out variables of less interest to this study, as follows

$$Ys_t=\beta_0+\beta_1 Cr_{st}+\mu_t \quad (7)$$

Where Ys_t is total output of the respective sub-sector of the Nigerian agriculture in year t (measured in MT) and Cr_{st} is total amount of formal credit allocated to the sub-sector in year t (measured in millions of Naira).

From a practical point of view, the GDP, expressed in millions of Naira, is considered a more plausible and easier measurement of sectoral output. Thus, we substitute Ys_t with $GDPs_t$. The model then becomes

$$GDPs_t=\beta_0+\beta_1 Cr_{st}+\mu_t \quad (8)$$

Where $GDPs_t$ represent the output of each subsector of Nigerian Agriculture, measured in millions of Naira.

Replicating equation (8) the following three models are developed for this study:

$$\text{(i). } GDPC_t=\beta_0+\beta_1 CrC_t+\mu_t \quad (9)$$

Where $GDPC_t$ is the aggregate output of the crop sector of the Nigerian agriculture in year t (in millions of Naira) and CrC_t is total amount of formal credit made available to the crop sector in year t (in millions of Naira).

$$\text{(ii). } GDPL_t=\beta_0+\beta_1 CrL_t+\mu_t \quad (10)$$

Where $GDPL_t$ is the aggregate output of the livestock sector of the Nigerian agriculture in year t (in millions of Naira) and CrL_t is total amount of formal credit made available to the livestock sector in year t (in millions of Naira).

$$\text{(iii). } GDPF_t=\beta_0+\beta_1 CrF_t+\mu_t \quad (11)$$

Where $GDPF_t$ is the aggregate output of the fishing sector of the Nigerian agriculture in year t (in millions of Naira) and CrF_t is total amount of formal credit made available to the fishing sector in year t (in millions of Naira).

(c). Estimation of the models

(i)The Crop Sector Output-Formal Credit Model

As noted in various literature, empirical analysis of time series data pose several challenges as empirical work, including causality tests of Granger and Sims based on time series data assumed that the underlying time series is stationary (see Seddighi et al (2000); Enders (1995); Patterson (2000). Mercifully, as Gujarati (2003) noted, by simply establishing stationarity of the residuals from regression equation, if they are stationary, the traditional regression methodology is applicable to data involving non stationary time series.

Cointegration was tested on the data collected for this study using the Cointegrating Regression Durbin-Watson (CRDW) Test method as expounded by Gujarati (2003).

Our regression model:

$$GDPC_t=\beta_0+\beta_1 CrC_t+\mu_t \quad (9)$$

was estimated and the residuals obtained.

The computed CRDW *d* (1.533) obtained from the cointegrating regression (9) is greater than the critical value of 0.386 at the 5% level, thus it was concluded that the regression residuals are stationary. Furthermore, the estimated DW *d* value of 1.533 is greater than the critical DW d_U value of 1.483 indicating that there is no evidence of positive first order serial correlation. Thus, our OLS estimators for equation (9) are efficient and the usual t and F tests can be legitimately applied.

(ii) The Livestock Sector Output-Formal Credit Mo- del

Cointegration was tested on the data collected for this study using the Cointegrating Regression Durbin-Watson (CRDW) Test method. The computed DW *d* (0.765) obtained from the cointegrating regression (10) is greater than the critical value of 0.386 at the 5% level, thus it was concluded that the regression residuals are stationary. However, the estimated DW *d* value of 0.765 is lower than the critical DW d_L value of 1.341, indicating an evidence of positive first order serial correlation (Appendix Table A1). The first-order difference transformation method was not used to remedy the detected autocorrelation problem because it is not appropriate for our case despite its other advantages. This decision is guided by Maddala (1992) rule of thumb on the appropriateness of using the first-order difference method: *use the first difference transformation method whenever* $d<R^2$. Our computed *d* and R^2 from equation (10) are 0.765 and 0.740 respectively i.e. $d > R^2$. (See Appendix Table A2).

The Praise-Winsten transformation method, as expounded by Gujarati (2003) was used to transform the model, using ρ estimated based on the Durbin-Watson *d* statistic. This is done, based on the following assumptions: (a) that the error term in equation (10) follows the AR (1) scheme and (b) that if equation (3) holds true at time t, it also holds true at time (t-1), thus:

$$GDPL_{t-1}=\beta_0+\beta_1 CrL_{t-1}+\mu_{t-1} \quad (12)$$

Multiplying equation (12) by ρ

$$\rho GDPL_{t-1}=\rho\beta_0+\rho\beta_1 CrL_{t-1}+\rho\mu_{t-1} \quad (13)$$

Subtracting equation (13) from equation (10)

$$(GDPL_t-\rho GDPL_{t-1})=\beta_0(1-\rho)+\beta_1(CrL_t+\rho\beta_1 CrL_{t-1})+\varepsilon_t \quad (14)$$

Where $\varepsilon_t=(\mu_t-\rho\mu_{t-1})$

Equation (14) was then expressed as follows

$$GDPL_t^*=\beta_0^*+\beta_1^* CrL_t^*+\varepsilon_t \quad (15)$$

Where $\beta_0^*=\beta_0(1-\rho)$, $GDPL_t^*=(GDPL_t-\rho GDPL_{t-1})$, $CrL_t^*=(CrL_t+\rho\beta_1 CrL_{t-1})$ and $\beta_1^*=\beta_1$. OLS was then applied to the transformed variables to obtain the usual optimum properties of the OLS coefficients asymptotically.

(iii) The Fishing Sector Output-Formal Credit Model

Cointegration was tested on the data collected for this study using the Cointegrating Regression Durbin-Watson

(CRDW) Test method. The computed DW *d* (0.533) obtained from the cointegrating regression (11) is greater than the critical value of 0.386 at the 5% level, thus it was concluded that the regression residuals are stationary. However, the estimated DW *d* value of 0.533 is lower than the critical DW d_L value of 1.341, indicating an evidence of positive first order serial correlation (Appendix Table A2). The first-order difference transformation method was used to remedy the detected autocorrelation problem because it is appropriate for our case in addition to its other advantages. This decision is guided by Maddala (1992) rule of thumb on the appropriateness of using the first-order difference method: *use the first difference transformation method whenever* $d<R^2$. Our computed *d* and R^2 from equation (11) are 0.533 and 0.670 respectively i.e. $d < R^2$. (See Appendix Table A2).

Assuming $\rho = 1$ and $\beta_0' = \beta_0(1-\rho) = 0$, the transformed model (11) becomes the following no-intercept model

$$GDPF_t' = \beta_1' CrF_t' + \mu_t \quad (16)$$

Where

$$GDPF_t' = GDPF_t - GDPF_{t-1} \quad (17)$$

$$\beta_1' CrF_t' = \beta_1 CrF_t - \beta_1 CrF_{t-1} \quad (18)$$

The regression coefficient $\beta_1' = \beta_1$ was directly estimated by OLS methods for regression through the origin.

3. Results and Discussions

3.1. Relationship between Aggregate Output of the Crop Sector and Aggregate Amount of Formal Credit to the Crop Sector

The aggregate crop sector output- credit model (9) is estimated using the time series data for the period 1981-2009 with SPSS 16.0. The F value of 76.493 computed for equation (9) is highly significant, when viewed in relation to the p-value of 0.000. This implies that aggregate amount of formal credit to the crop sector significantly explain the variation in the aggregate output of the crop sector of the Nigerian agriculture. The R^2 value obtained from the equation is 0.739. This further indicates that the aggregate amount of formal credit to the crop sector explained about 74% of the variation in the aggregate output of the crop sector in Nigeria during the study period. This finding could be attributable to the fact that agricultural credit is supposed to increase farmers' access to resources and technologies necessary to boost agricultural production. The unexplained variation, 26%, in the model is attributable to other factors not specified in the model due to difficulties in quantification and for computational ease.

The value of the estimated coefficient of formal credit to the crop sector, which measures the slope of the line, is 0.860. This shows that as the quantity of formal credit increase by one naira (N1), the estimated increase in the output of the crop sector amounts to 86 kobo. (The Nigerian Naira is made up of 100 Kobos). The estimated value of the intercept, 540786.54, indicates the mean level of output of the crop subsector when zero formal credit is made available to the subsector; it is the mean effect on the crop sector of all variables ommitted from the regression model. The value of the coefficient of correlation (r) of 0.860 shows that the 2 variables, output and credit, are highly positively correlated. The computed t value of 8.746 calculated for β_1, the coefficient of formal credit to the crop sector, is found to be highly significant when viewed in relation to the computed p-value of 0.000, hence the null hypothesis is rejected and it is thus concluded that there is a significant and positive relationship between the aggregate output of the crop sector and aggregate amount of formal credit to the crop sector in Nigeria.

Table 1. Results of Regression Analysis of aggregate crop sector output-credit model (9)

Independent Variables	Coefficients	t-values	p-values
Constant term	540786.535	2.056a	0.050
Formal Credit	0.860*	8.746a	0.000

R^2=0.739; Adjusted R^2=0.729; R=0.860; $F_{(model)}$ =76.493; p-value for $F_{(model)}$=0.000; DW *d*=1.533.
[a]Statistically significant statistics at $\alpha = 5\%$,*Standardized

3.2. Relationship between Aggregate Output of the Livestock Sector and Aggregate Amount of Formal Credit to the Livestock Sector

The transformed aggregate livestock sector output- credit model (15) is estimated using the time series data for the period 1981-2009 with SPSS 16.0, in conjunction with MS Excel 2007. The F value of 65.686 computed for equation (15) is highly significant at the 5% level, when viewed in relation to the p-value of 0.000. This implies that aggregate amount of guaranteed loan to the livestock sector significantly explain the variation in aggregate output of the livestock sector of the Nigerian agriculture. The R2 value obtained from the equation is 0.709. This further indicates that the aggregate amount of formal credit to the livestock sector explained about 71% of the variation in the aggregate output of the livestock sector in Nigeria during the study period. This finding could be attributable to the fact that agricultural credit is supposed to increase farmers' access to resources and technologies necessary to boost agricultural production. The unexplained variation, 29%, in the model is attributable to other factors not specified in the model due to difficulties in quantification and for computational ease.

The value of the estimated coefficient of formal credit to the livestock sector, which measures the slope of the line, is 0.842. This shows that as the quantity of formal credit increase by one naira (N1), the estimated increase in the output of the livestock sector amounts to 84 kobo. The estimated value of the intercept, 24912.31, indicates the mean level of output of the crop subsector when formal credit made available to the subsector is zero; it is the mean effect on the crop sector of all variables ommitted from the regression model. The value of the coefficient of correlation (r) of 0.842

shows that the 2 variables, output and credit, are highly positively correlated.

The computed t value of 8.105 calculated for β_1, the coefficient of guaranteed formal credit to the livestock sector, is found to be highly significant when viewed in relation to the computed p-value of 0.000, hence the null hypothesis is rejected and it is thus concluded that there is a significant relationship between aggregate output of the livestock sector and aggregate amount of formal credit to the livestock sector in Nigeria.

Table 2. Results of Regression Analysis of the transformed aggregate livestock sector output- credit model (15)

Independent Variables	Coefficients	t-values	p-values
Constant term	24912.31		
Formal Credit	0.842*	8.105[a]	0.000

R^2=0.709; Adjusted R^2=0.698; R=0.842; $F_{(model)}$ =65.686; p-value for $F_{(model)}$=0.000; DW *d*=0.736
[a]Statistically significant statistics at α = 5% ,*Standardized

3.3. Relationship between Aggregate Output of the Fishing Sector and Aggregate Amount of Formal Credit to the Fishing Sector

The transformed aggregate fishing sector output- credit model (16) is estimated using the time series data for the period 1981-2009 with SPSS 16.0. The F value of 19.132 computed for equation (16) is highly significant at the 5% level, when viewed in relation to the p-value of 0.000. This implies that aggregate amount of formal credit to the fishing sector significantly explain the variation in aggregate output of the fishing sector of the Nigerian agriculture.

The value of the estimated coefficient of formal credit to the fishing sector, which measures the slope of the line, is 0.651. This shows that as the quantity of formal credit increase by one naira (N1), the estimated increase in the output of the fishing sector amounts to 65 kobo. The computed t value of 4.374 calculated for β_1, the coefficient of guaranteed formal credit to the fishing sector, is found to be highly significant when viewed in relation to the computed p-value of 0.000, hence the null hypothesis is rejected and it is thus concluded that there is a significant relationship between aggregate output of the fishing sector and aggregate amount of loans guaranteed to the fishing sector in Nigeria.

Table 3. Results of Regression Analysis of first-difference aggregate fishing sector output- credit model (16).

Independent Variables	Coefficients	t-values	p-values
Formal Credit	0.651*	4.374[a]	0.000

$F_{(model)}$ =76.493; p-value for $F_{(model)}$=0.000; DW *d*=1.533.
[a]Statistically significant statistics at α = 5% ,*Standardized

The findings of this study indicates that formal credit is positively and significantly related to the productivity of the crop, livestock and fishing subsectors of the Nigerian agricultural sector. These findings are in agreement with several other studies elsewhere (Sial et al, 2011; Bashir et al, 2010; Iqbal et al, 2003, Olagunju, 2007 and CBN, 2007).

4. Conclusions

The paper set out to investigate the relationship between agricultural production and formal credit supply in Nigeria. The methodology employed in the study involved the estimation of three simple regression models relating agricultural output with formal credit while holding other explanatory variables constant. Findings of the paper indicates that (i) there is a positive and significant relationship between aggregate output of the crop sector and aggregate amount of formal credit to the crop sector. (ii) There is a significant and positive relationship between aggregate output of the livestock sector and aggregate amount of formal credit to the livestock sector. (iii) There is a significant and positive relationship between aggregate output of the fishing sector and aggregate amount of formal credit to the fishing sector. Thus, it is concluded that formal credit is positively and significantly related to the productivity of the crop, livestock and fishing sectors of Nigerian agriculture. Based on the findings it is recommended that government should continue to encourage the expansion of formal credit sources to reach as much farmers as possible.

Appendix

Table A1. Results of Regression Analysis of aggregate Livestock sector GDP- credit model (10) Level model

Independent Variables	Coefficients	t-values	p-values
Constant term	64037.797	3.627[a]	0.001
Formal Credit	0.860*	8.763[a]	0.000

R^2=0.740; Adjusted R^2=0.730; R=0.860; $F_{(model)}$ =76.789; p-value for $F_{(model)}$=0.000; DW *d*=0.765.
[a]Statistically significant statistics at α = 5%
*Standardized

Table A2. Results of Regression Analysis of aggregate Fishing sector GDP- credit model (11) Level model

Independent Variables	Coefficients	t-values	p-values
Constant term	34290.289	3.317[a]	0.003
Formal Credit	0.819*	7.269[a]	0.000

R^2=0.670; Adjusted R^2=0.658; R=0.819; $F_{(model)}$ =52.834; p-value for $F_{(model)}$=0.000; DW *d*=0.533.
[a]Statistically significant statistics at α = 5%
*Standardized

Table A3. Time Series Data on the contributions of the crop, livestock and fishing sector to national GDP at current prices alongside corresponding guaranteed loan volume by purpose in Nigeria (1981-2009)

Year	[a]Crop Sector GDP (N Millions)	[a]Livestock Sector GDP (N Millions)	[a]Fishing Sector GDP (N Millions)	[b]Quantity of Crop Sector Guaranteed Loans (N Millions)	[b]Quantity of Livestock Sector Guaranteed Loans (N Millions)	[b]Quantity of Fishing Sector Guaranteed Loans (N Millions)
1981	10088	1706.8	723.3	9.606	25.148	-
1982	11274	2678.6	885.1	6.404	21.836	0.0396
1983	12870	3510.4	1297.7	12.111	21.79	1.575
1984	16920	4474.7	1140.8	6.118	11.817	0.826
1985	19729	4841.6	710.3	18.549	14.159	0.7181
1986	20442	4994.9	1010.8	41.064	25.804	1.645
1987	31214	5660.3	873.7	70.697	29.388	4.526
1988	48679	6009.2	1532.4	97.836	18.48	4.537
1989	56577.4	7970.2	3173.3	115.552	7.875	4.539
1990	68416.7	9562	4216.8	88.856	4.967	3.901
1991	80002	10528.8	4701.3	71.405	4.447	1.698
1992	120720.1	15565.6	6199.5	82.684	6.056	1.039
1993	196133.8	24723.8	7341.7	72.637	5.506	0.428
1994	296966.8	36707.5	10090.8	90.166	10.528	2.438
1995	527474.4	65704.6	19067.3	134.567	18.049	1.512
1996	713786.1	88150.2	30022.9	187.012	28.217	2.145
1997	807759.8	98033.8	36255.7	201.248	23.405	3.555
1998	892052.7	107013.7	43970	182.962	22.587	3.456
1999	948183	111110.1	50715.8	208.978	11.952	6.18
2000	1000069.5	116393.4	54010.3	308.605	27.307	0.899
2001	1337766.6	154495.5	75170.9	622.695	60.416	15.742
2002	3050243.5	183202.2	90431.2	938.949	64.45	12.069
2003	3275429.2	202263.1	106466.1	1026.156	100.486	13.05
2004	3478096.4	243887.5	130116.5	1825.853	190.304	18.24
2005	4228282.2	313252.3	169878	8321.932	844.883	262.195
2006	5291619.1	378702.6	196454.2	3770.549	368.151	114.4
2007	6024381	434151.7	215523	3913.774	353.487	140.69
2008	7114794	512943.5	254637.2	4965.965	1108.484	368.63
2009	8207652.7	584940.7	290933.9	5794.654	1725.801	708.621

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