Economic Development and Income Distribution

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1. INTRODUCTION

The Kuznets' U-shaped hypothesis, which postulates that income inequality first increases and then decreases during the development, has been extensively tested and empirically confirmed. The reason that income inequality first rises and then falls during the development process, however, has not been adequately analyzed and explained.

In this paper, we construct a two-sector, two-goods model of a developing economy with sectoral income inequality resulting from labor productivity and real wages being higher in the modern sector than in the traditional sector. Higher wages in the modern sector attracts labor from the traditional sector as long as the expected wage in the modern sector exceeds the actual real wage in the traditional sector, as postulated by the Harris-Todaro[7] model. When real wages in both sectors have been equalized and unemployment in the modern sector and throughout the economy has fallen to the natural rate of unemployment, income inequality falls to zero.

Our paper shows that the Gini coefficient is zero when there is no modern sector, becomes positive with the introduction of a modern sector, reaches a unique maximum, and then declines and reaches zero when real wages in the modernized traditional sector and in the original modern sector have become equal and unemployment throughout the economy has fallen to the natural rate.

We then introduce a Monte Carlo simulation of a country passing through four stages of development, starting at stage 1 of a low-wage, labor-intensive country to stage 4 which is a high-wage developed country. Transition to each stage is based upon the introduction of a new modern sector which sets the country on a new potential GDP path. The simulation randomizes the percentage of the traditional labor force that is absorbed into the modern sector and then computes the Gini coefficient and the income per worker at each stage of development.

2. TWO-SECTOR, TWO-GOODS MODEL

Production Function

While the choice of the kind of production function will not alter our conclusions, we decided that the Harrod-Domar is probably the most appropriate for the long-term simulation that we are presenting. The main reasons are that most countries have had a labor surplus for much of their history, and that growth has been more constrained by the lack capital than by a shortage of labor. Furthermore, as Wassily Leontief [9] repeatedly pointed out, there are problems with integrating technology using a Cobb –Douglas function. It is easier to think of production systems where capital and labor are complements within the same technology rather than as substitutes for one another. The substitution occurs as a result of a change in the capital/labor ratio when new technology is introduced. Hence, we will assume that both the traditional and the modern sector will be characterized by a production function such as:

$$Q = b\,K,$$

where Q is the number of units of output, K is the capital stock and b is a constant whose inverse1/b is defined to be the incremental capital-output ratio or ICOR.

The capital/labor ratio will be fixed within any technology to a constant, i.e., K/L = C. Figure 1 gives a representation of the typical isoquants of two sectors, one being more capital intensive than the other.

The wage in each of the sectors will be set to the marginal revenue product of labor, i.e.,

$W = \frac{PC}{ICOR}$, where P is the price of the good and C is the capital/labor ratio.

Also, there is the implicit assumption of the sector being a price taker for the good.

Traditional Sector Production Function:

1. $Q_A = b_A K_A$, $K_A / L_A = C_A$,

where: Q_A = output in the traditional sector

L_A = labor force in the traditional sector

K_A = the capital stock in the traditional sector

C_A = capital/labor ratio in the traditional sector

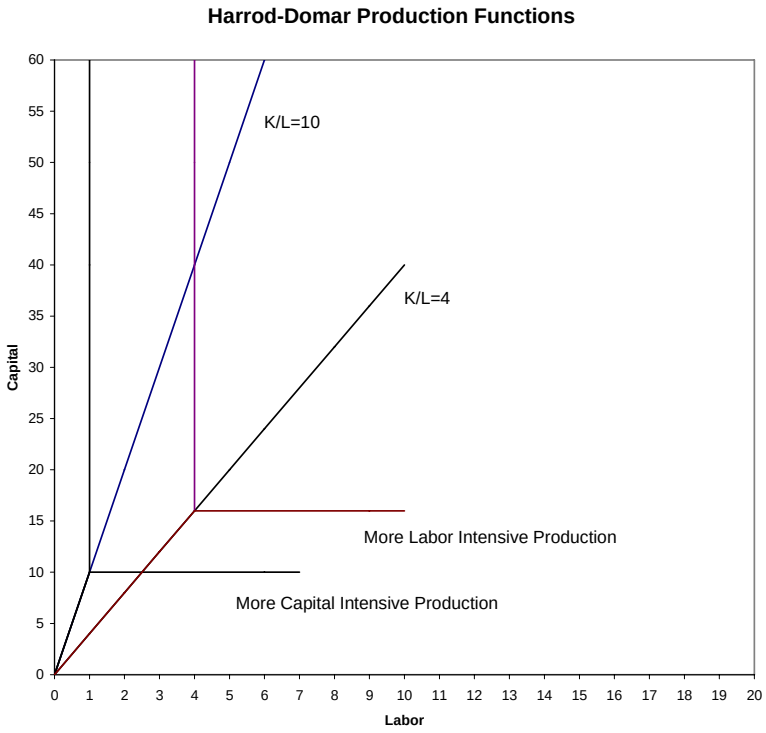


Figure 1

Modern Sector Production Function:

2. $Q_M = b_M K_M$, $K_M / L_M = C_M$,

where: Q_M = output in the modern sector

L_M = labor force in the modern sector

K_M = the capital stock in the modern sector

C_M = capital/labor ratio in the modern sector

Price of the Traditional Good:

3. $$P_A = P_M \left[\frac{Y/N_A}{Y/N_M} \right],$$

where P_A the price of the traditional good, is a function of the ratio of per capita income in the traditional sector to per capita income in the modern sector times the price of the modern good. This assumption is based on the stylized fact that high per capita countries get that way because they produce modern technology goods which command higher prices on world markets, while low per capita countries are mainly producers of raw commodities and manufactures which are produced

with traditional technologies.

The Real Wage in each Sector:

4. $W_A = \frac{P_A C_A}{ICOR_A}$ and $W_M = \frac{P_M C_M}{ICOR_M}$

Which are the respective marginal revenue products of labor as stated above.

5. $L_T = L_A + L_M$ where: L_T is the total labor force, here we are assuming that only disguised unemployment exists and it is in the traditional sector. We argue that as long as the wage is higher in the modern sector, there will be migration from the traditional sector to the modern sector. This is an argument based on a result in the Harris-Todero model.

The Gini Coefficient:

6. $S_A = L_A \cdot W_A / (L_A \cdot W_A + L_M \cdot W_M)$

where S_A is the share of total income flowing to the traditional sector.

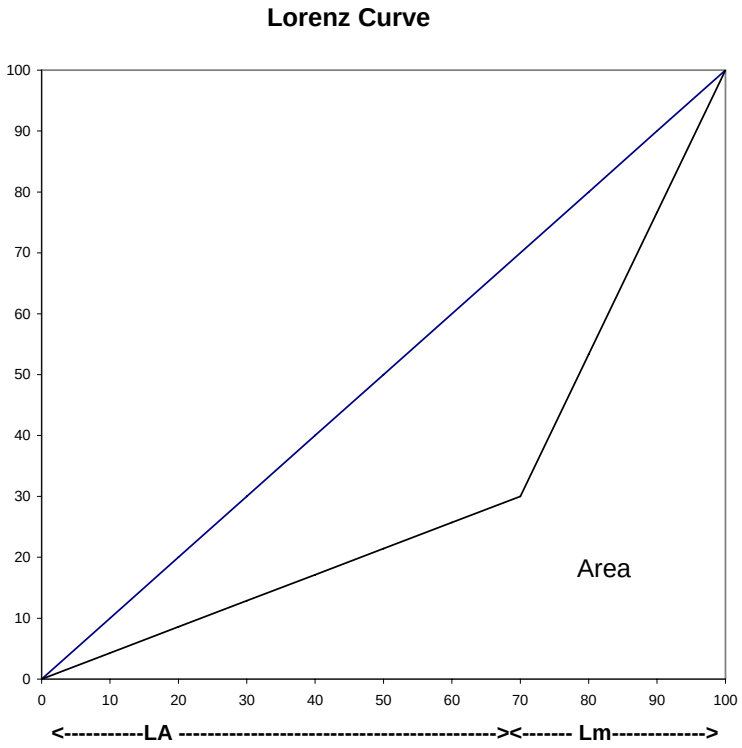
Keeping in mind that $W_A < W_M$ because of lower productivity of labor in the traditional sector than in the modern sector.

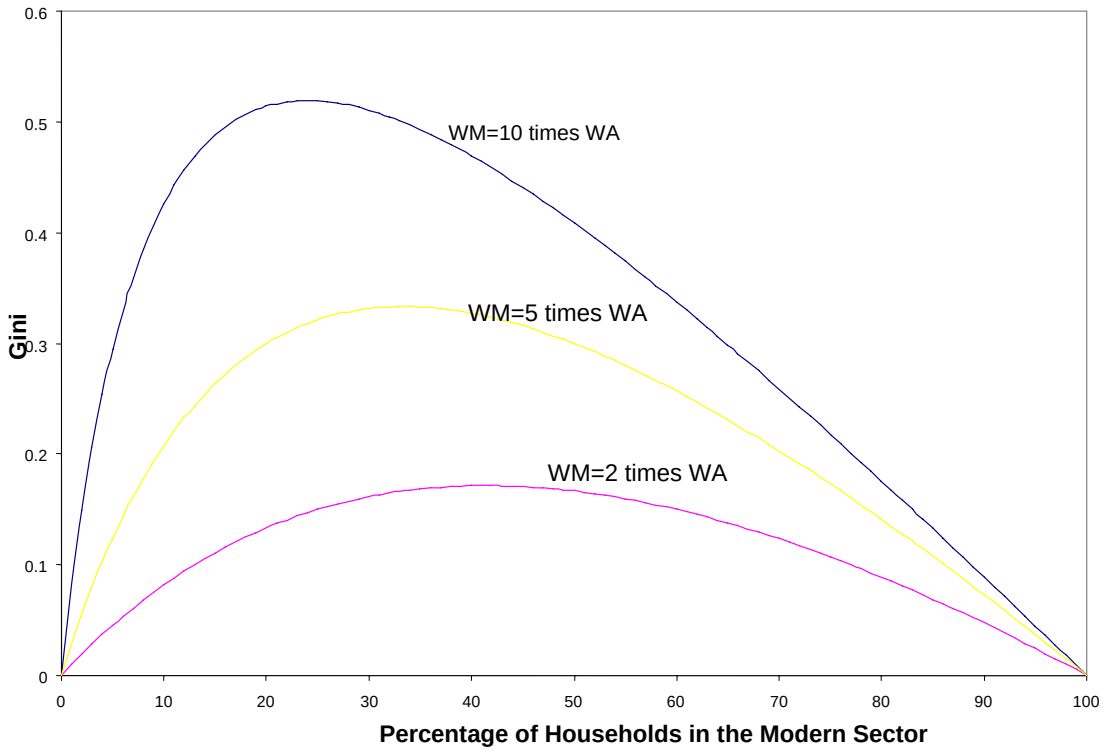
The Gini coefficient is then given by:

7. Gini = $1 - (2 \cdot \text{Area})$,

where Area = $[(S_A \cdot L_T) + L_M] / (2 \cdot L_T)$ as illustrated in figure 2.

Since the wages are fixed in each sector, it is easy to see that the area in figure 2 will be 1/2 if the entire labor force is in either of the two sectors of the economy (which makes it a one-sector economy). Hence, in these two cases the Gini coefficient will be 0. When the labor force is divided into two sectors, the area portion of figure 2 will be less than ½ and the Gini > 0. It will reach a maximum and then begin to recede as enough of the labor force moves out of the traditional sector into the modern sector. A more mathematically rigorous demonstration of this is given in Campano and Salvatore [3]. The amount of inequality reached will depend on the relative wages of the two sectors as seen in figure 3.


Lorenz Curve
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
Area
<----------LA ----------><------- Lm---------->
Figure 2


0.6
0.5
0.4
0.3
0.2
0.1
0
Gini
WM=10 times WA
WM=5 times WA
WM=2 times WA
0
10
20
30
40
50
60
70
80
90
100
Percentage of Households in the Modern Sector
Figure 3

In summary, before the introduction of the modern sector, the Gini will equal 0. After the introduction of the modern sector, there will be migration of the labor force from the traditional sector to the modern sector until the wage in the traditional sector is equal to the wage in the modern sector. During this stage, before the equalization of wages, the Gini will be greater than 0 and reach an absolute maximum. When wage parity is finally achieved, the Gini will fall to 0 again.
Hence, the model captures the main elements of the Kuznets' hypothesis, namely that during the process of development, income inequality will worsen as the modern sector is implemented, reach a turning point and begin to improve as the traditional sector diminishes and marginal productivity in that sector raises wages on a par with the modern sector.

3. Technology Change in the Modern Sector

One possibility during the process of development is that the movement from the traditional to the modern sector is slow or stalled, in which case the Gini coefficient becomes fixed over a long period of time. This can happen if there is a problem in raising enough investment to provide the necessary complementary capital to absorb new entrants into the modern sector. If this persists long enough, the modern sector may not be modern by international comparisons. Thus, the whole country is back to being in the traditional sector again, albeit at a higher level of development, but essentially, technologically stagnant. Hence the country appears not to be moving along a smooth Kuznets' curve. Such countries need to be stimulated, either by internal investment or by foreign direct investment to (FDI) to continue development.

Another possibility is that a new modern sector may be introduced at some point before the labor force is completely integrated into the current modern sector. One would expect that sooner or later a new technology will become the incubator of a new modern sector. If the observation by P. Conceição and James P. Galbraith [4] generally holds true, i.e., countries that have frequent innovation in research and development of new technology (like Japan and the United States) tend to have higher inequality, then introducing a new modern sector (at random levels of labor force integration into the previous modern sector) should result in an interruption of the natural course of inequality correction predicted by the Kuznets' curve. However, besides the measure of inequality which is a relative measure, it is also important to observe the level of per capita

income which gives an indication of the general rise in living standards in the country. To capture both the change in equality and the rise in per capita income we do a Monte Carlo simulation which introduces a new modern sector at random levels of integration of the labor force into the current modern sector. We have picked four levels of technology through which the country must progress, starting with the lowest wage-lowest capital intensive stage to the highest wage-highest capital intensive stage. To set the parameters corresponding to each stage of wage-capital intensity, we selected a sample of 84 countries and obtained the national accounts expenditure data for them from the United Nations Statistical Office. The data are in real U.S. dollars (base year 1900). For each country we estimated the ICOR and per capita income. The estimating equation for the ICOR is given by:

$$Y_{t+1} = a + b\sum_{i=1}^{t} I_i, where: \Delta Y = bI, and..ICOR = \frac{1}{b}.$$

We then sorted the countries by per capita income in 2000 and divided them into the four stages of development. The results for the lowest wage –most labor- intensive group is shown below:

Lowest Wage, Labor-Intensive Countries

		ICOR	Y/P		
1	Uganda	2.28	236	STAGE 1	
2	Benin	2.88	313		
3	Niger	3.1	141		
4	Ghana	3.77	251		
5	Mauritania	3.85	351	median	median
6	Rwanda	4.29	216	ICOR	Y/P
7	Bangladesh	4.42	377	4.36	245
8	Malawi	4.92	151		
9	Nepal	4.98	218		
10	Madagascar	5.03	239		
11	Kenya	11.78	341		
12	Zambia	33.36	303		

Table 1.

The median ICOR for these countries is 4.36. In general, the lower the capital-intensiveness, the lower the ICOR, because these countries take less capital to spur growth. However, two of these countries have very high ICORs, namely, Kenya and Zambia. This reflects other impediments to growth which are offsetting the efficiency of capital. They may be non-economic factors such as political instability, natural disaster, etc. The low per capita incomes of this group reflect the low

prices they receive for the kinds of goods they produce, which are mainly raw and semi-processed commodities.

In table 2 we have the countries in the next stage of development. These countries have large populations of the labor force still in the traditional sector, where the wages are low, but they also have a modern sector where the educational and skills level can be quite high. There the wages are accordingly also higher. The range of per capita incomes in this group is a bit wide, and perhaps it might be better to divide it into two, above and below $1000. However, the median ICORs would not change much, so for the purpose of this exercise we will leave them as one group.

Low Wage, Mixed Levels of Capital-Intensiveness

		ICOR	Y/P		
1	Senegal	3.12	423	Stage 2	
2	India	4.16	455		
3	Nigeria	4.25	416		
4	China	4.29	863		
5	Sri Lanka	4.91	820		
6	Bolivia	5.25	1009		
7	Egypt	5.3	1535	median	median
8	Pakistan	6.12	496	ICOR	Y/P
9	Cote d'Ivoire	6.18	638	6.32	842
10	Jordan	6.45	1699		
11	Philippines	6.52	1002		
12	Iran Islamic Republic	6.87	1551		
13	Morocco	7.91	1129		
14	Algeria	9.23	1788		
15	Indonesia	10.25	718		
16	Guyana	11.54	958		
17	Honduras	12.02	918		
18	Lesotho	17.64	481		
19	Zimbabwe	65.98	447		
20	Bulgaria	328.41	1576		

Table 2

The stage 3 countries have per capita income above $1800. Many Latin American countries are included in this group. The median ICOR is not much different than the stage 2 countries, but the median per capita income is about 4 and ½ times higher indicating higher prices for the kinds of goods they are producing.

The stage 4 countries are developed countries. They have a median income per capita which is almost 6 times greater than the stage 3 countries, 24 times higher than the stage 2 countries and almost 95 times greater than the stage 1 countries. Also notice that the median ICOR is up to 7.33. Clearly, the time it will take to go from stage 1 to stage 4 is going to be very

long. Even under a favorable long-term GDP growth of 5% and a long-term population growth rate of 2%, yielding a GDP per capita growth rate of 3%, it would take a country more than 150 years to go from stage 1 to stage 4. Likewise, it would take over 40 years to get to stage 2 from stage 1 and over 90 years to get to stage 3 from stage 1. Of course, if a country can accelerate its modern sector development, as China has done, these times can be substantially cut.

Medium Wage, Mixed Capital-Intensiveness Countries

1	Brazil	1.06	3461	Stage 3
2	Trin.&Tobago	2.58	6347	
3	Costa Rica	3.99	4059	
4	Dom.Republic	4.21	3029	
5	Mauritius	5.01	3839	
6	El Salvador	5.02	2090	
7	Botswana	5.15	2787	
8	Tunisia	5.35	2033	
9	Fiji	5.42	2031	
10	Poland	5.85	4310	
11	Panama	6.01	3939	
12	Chile	6.32	4857	
13	Peru	6.58	2047	
14	Malaysia	7.31	3927	
15	Barbados	7.6	9739	
16	South Africa	7.86	2913	
17	Mexico	8.24	5803	
18	Hungary	9.59	4565	
19	Uruguay	11.09	6011	
20	Thailand	11.91	1998	
21	Colombia	12.9	1989	
22	Argentina	12.98	7707	
23	Czech Republic	15.25	5429	
24	Venezuela	28.27	4966	
25	Jamaica	38.99	3056	

Table 3

median ICOR	median Y/P
6.58	3927

Table 4

Initializing the Parameters

The Monte Carlo simulation is intended to capture the range of outcomes in terms of the Gini coefficient and income per worker for a country starting in stage 1 and progressing to stage 4. Income per worker will be a proxy for GDP per capita. The beginning of each new stage will be random, therefore the proportion of the labor force which was absorbed into the modern sector from the previous stage will also be random. The ICOR of the modern sector will be the median ICOR of the next stage, i.e.,

$$ICOR_{M_T} = ICOR_{median_{T+1}}$$

and $ICOR_{A_T} = ICOR_{median_T}$. That is, the $ICOR_A$ of each stage = the median ICOR of the stage. We will also make the simplifying assumptions that C_M/C_A=10/4 for all stages and the price of the modern good will be set to the GDP per capita of the next stage, i.e.,

$$P_{M_T} = \left(\frac{Y}{N}\right)_{T+1}.$$

High wage, High Capital-Intensive Countries

1	Ireland	2.39	24979	Stage 4	
2	Cyprus	4.8	11603		
3	Canada	5.8	23280		
4	Singapore	5.9	23043		
5	Finland	5.91	23163		
6	United States	6.01	34364		
7	Israel	6.07	19886		
8	Australia	6.38	20320		
9	New Zealand	6.54	13651		
10	Norway	6.63	37072		
11	Korea	6.91	10938		
12	United Kingdom	6.97	24514	median	median
13	Sweden	7.04	26986	ICOR	Y/P
14	Netherlands	7.33	23314	7.33	23163
16	Spain	7.93	14261		
17	Greece	8.45	10341		
18	France	8.47	21776		
19	Denmark	8.65	29632		
20	Hong Kong SAR China	9.57	24915		
21	Belgium	9.7	22168		
22	Austria	10.05	23942		
23	Portugal	10.46	10411		
24	Italy	11.62	18622		
25	Germany	13.21	23076		
26	Switzerland	19.7	34328		
27	Japan	27.1	37361		

Table 4

Simulation Results

Table 1 below shows the results of 25 simulations of a country progressing from stage 1 to stage 4 of development. Keeping in mind the long period of time it takes to progress from one stage to another, we can think of this time as a period during which the country is on one path of potential GDP. With the introduction of a new modern sector, the country moves on a new potential path. Table 6 shows the results of the final incomes per worker and Gini coefficients from stage 3 to stage

4 sorted. There is a wide range of outcomes for these 25 scenarios, with the median income per worker at $21,494 and Gini coefficient = .36. When we examine the lowest Gini coefficients we have two basic situations; one where almost all of the labor force is still in the traditional sector and the other where almost all of the labor force is in the modern sector. In the first situation 97% of the labor force does not make it to the modern sector, the Gini indicates a very even distribution of income but the income per worker only reaches a level of $3522. In the other situation, 93% of the labor force makes it to the modern sector, the income per worker is almost 10 times higher at $31899 and the Gini is at .073. Clearly the second situation would be the more desirable outcome. For these scenarios, the highest levels of inequality occur when about 80% of the labor force is still in the traditional sector when moving from stage 3 to stage 4. The results accent the importance of integrating as much of the labor force into the modern sector. This may mean stressing the education and training of the labor force in a way that people will have the opportunity to move from traditional employment to modern sector employment as new technology is put into practice. It may also mean having a labor force capable of researching and developing new technology.

One result that we get from the simulation is that after a long period of development a country may appear to have gone through a Kuznets cycle, or it may not. Every time a new modern sector is introduced, which is the result of research and new technology being introduced into the production system, the potential for a worsening of the income distribution exists. If enough of the labor force can be absorbed by the new sector, then the best of all possible worlds occurs because incomes will rise and tend towards equalization. On the other hand, if not enough of the labor force is absorbed, then there will be a worsening of equality. Frequent updates of the modern sector (as in the United States1980-2000), can lead to increasing inequality with increasing mean incomes per capita. That is, worsening Gini coefficients, and shares of total income flowing to the upper 5% of the households increasing, but at the same time the growth rate of the incomes of low wage receivers increasing in real terms as well as in nominal terms. In a recent Congressional Budget Office paper [14], the authors found that since 1990, *real hourly wage rates at the bottom of the distribution have increased substantially—slightly more than the typical wage rate* . They attribute this to an increase in the *educational levels and ages of workers in low-wage jobs*. Clearly a country needs new modern sectors to move along faster growing potential paths if it hopes to achieve the kinds of growth rates it needs to raise living standards, but it also needs institutional complements in terms of access to education and health care that are necessary for human formation to insure that the benefits of the growth will be spread as evenly as possible.

Monte Carlo Simulation Results

Stage 1 to Stage 2				Stage 2 to Stage 3				Stage 3 to Stage 4			
RN	L_A	Inc./L	Gini	RN	L_A	Inc./L	Gini	RN	L_A	Inc./L	Gini
72	28	1214	.225	91	9	5581	.09	23	77	9828	.569
80	20	1319	.167	95	5	5802	.054	57	43	20549	.384
37	63	754	.409	18	82	1539	.526	61	39	21810	.352
47	53	886	.374	69	31	4362	.280	64	36	22756	.238
85	15	1385	.129	15	85	1373	.506	63	37	22440	.336
23	77	570	.405	21	79	4916	.195	69	31	24332	.286
22	78	557	.401	9	91	1041	.413	58	42	20864	.376
48	52	899	.370	56	44	3643	.382	19	81	8567	.564
15	8	465	.350	64	36	2536	.508	47	53	17396	.459
13	87	439	.326	58	42	3754	.367	58	42	20864	.376
45	55	859	.383	48	52	3200	.439	93	7	31899	.073
58	42	1030	.317	53	47	3477	.404	18	82	8251	.561
21	79	544	.396	89	11	5470	.108	46	54	17080	.465
8	92	373	.238	65	35	4141	.312	33	67	12981	.542
57	43	1017	.323	84	16	5193	.152	3	97	3522	.193
63	37	1096	.417	83	17	5137	.161	91	9	31269	.092
53	47	965	.345	24	76	1872	.540	85	15	29377	.146
41	59	807	.397	92	8	5636	.008	74	26	25909	.243
40	60	794	.401	49	51	3256	.432	71	29	24963	.269
69	31	1175	.246	81	19	5027	.178	81	19	28116	.181
19	81	518	.384	61	39	3920	.344	56	44	20233	.392
22	78	557	.401	20	80	1650	.534	11	89	6044	.495
25	75	597	.411	73	27	4584	.246	54	46	19603	.407
51	49	938	.417	86	14	5304	.134	74	26	25909	.243
24	76	583	.408	55	45	3588	.389	60	40	21494	.360

RN = random number between 0 and 100 Table 5
Inc./L = Income per person in the labor force

Stage 3 to Stage 4 Final Results Sorted on the Gini

Inc./L	Gini	Inc./L	Gini	Inc./L	Gini	Inc./L	Gini
31899	0.073	25909	0.243	21494	0.36	17396	0.459
31269	0.092	25909	0.243	20864	0.376	17080	0.465
29377	0.146	24963	0.269	20864	0.376	6044	0.495
28116	0.181	24332	0.286	20549	0.384	12981	0.542
3522	0.193	22440	0.336	20233	0.392	8251	0.561
22756	0.238	21810	0.352	19603	0.407	8567	0.564
						9828	0.569

Table 6

An explanation of the initial assumptions

There were two arbitrary appearing assumptions that were used in the above simulations. The most curious one is that the ratio of the capital/labor ratios , i.e., $C_M/C_A=10/4$. If we relax this assumption, our results will be altered in one direction with higher terminal Gini coefficients and in another direction with lower terminal Gini coefficients.

$$\text{As } {}^{C_M}\!/_{C_A} \to 1, Gini \to 0,$$

and the higher the ratio, the higher the Gini. The ratio we used places the Gini close to observed values.

The other assumption was to set P_M to the per capita income of the next stage of development. This only serves to bring the incomes per worker to a level which would result in the observed magnitudes of the per capita incomes. If P_M were set to 100, the results would only change in the magnitude of income per worker.

4. Conclusions

We maintain that if one adopts the usual model of long-run economic growth, where potential GDP is the combined output of the traditional economy and a modern sector which is incubated by technological change, then corresponding to the growth of potential GDP there will be an asymmetric parabolic movement of inequality, as postulated by Kuznets more than a half of a century ago. We base this on cross-country empirical estimates of the Kuznets' curve (Campano and Salvatore[1]) and the dynamics of the Harris-Todaro model, as modified by Salvatore [12] of labor movement from the traditional to the modern sector and the corresponding adjustment to wages as this transpires.

Initially, inequality will be minimum, but as labor participation in the modern sector increases, the higher wages in that sector will tend to increase inequality. This will continue up to a point, but after enough of the labor force is incorporated in the modern sector the differences in wages will begin to diminish. However, if a new modern sector is introduced and potential GDP shifts to a new trajectory before the turning point is reached, then income inequality will continue to worsen between the two sectors. This in part depends upon a country's ability to introduce new technology and create demand for higher-level skills. As Conceição and Galbraith [4] (p. 140) point out, " *The perhaps surprising fact is that technology, which had been credited for driving growth and prosperity, came equally to be blamed for this observed increase in inequality in developed countries."*

REFERENCES

1. **Campano, Fred and Salvatore, Dominick**. "Economic Development, Income Inequality, and Kuznets' U-Shaped Hypothesis," Journal of Policy Modeling, June 1988, 10(2), pp. 265-280.
2. **Campano, Fred and Salvatore, Dominick**. "A First Step Towards Normalizing the Gini Coefficient," in Achille Lemmi and Camilo Dagum, eds., Research On Economic Inequality, JAI Press Inc.,vol.6,Greenwich Connecticut, 1995, pp. 109-115.
3. **Campano, Fred and Salvatore, Dominick**. "A Two-Sector Model, Two-Goods Model of Growth and Migration, and the Gini Coefficient," in F.Haslinger and O. Stönner-Venkatarama eds., Aspects of the Distribution of Income, Metropolis Verlag Marburg, Germany, 1998, pp. 123-131.
4. **Conceição, P. and Galbraith, James K**. "Towards a New Kuznets Hypothesis Theory and Evidence on Growth and Inequality," in James K. Galbraith and Maureen Berner, eds.,*Inequality and change - A global view*. New York: Cambridge University Press, 2001,pp. 139-160.
5. **Frosini, Benito V**. "Aggregate Units, Within-Group Inequality and the Decomposition of Inequality Measures," Statistica, June 1989, 49(3), pp. 349-369.
6. Gini, C. "Sulla Misura della Concentrazione e della Variabilita' dei Caratteri," Caratteri," Atti del R. Instituto Veneto di Scienze, Lettere ed Arti, 1914.
7. **Harris, J.R. and Todaro**, M.P. "Migration, Unemployment and Development: A Two-Sector Analysis," American Economic Review, March 1970, 60(1), pp. 126-142.
8. **Kuznets, S**. "Economic Growth and Income Inequality," American Economic Review, March 1955, 45(1), pp. 1-28.
9. **Kuzents, S**. "Quantitative Aspects of the Economic Growth of Nations," Economic Development and Cultural Change, March 1963, 11(2), pp. 1-80.
10. **Leontief, W**. "Econometrics," in H.S.Ellis ed. A Survey of Contempory Economics, Homeward, Illinois, Richard D. Irwin Press, 1948, pp.408-410, 443.
11. **Lorenz, M.** O. "Methods for Measuring Concentration in Wealth," Journal of the American Statistical Association, 1905, Vol. 9, pp. 209-219.
12. **Salvatore, D**. "Internal Migration, Urbanization, and Economic Development," in D. Salvatore,ed., World Population Trends and Their Impact on Economic Development. Westport, Connecticut, Greenwood Press, 1988, pp. 79-84.
13. **Todaro, M. P**. "A Model of labor Migration and Urban Unemployment in Less Developed Countries," American Economic Review, March 1969, 59(1), pp. 138-148.
14. **CBO** "Changes in Low-Wage Labor Markets Between 1979 – 2005," The Congress of the United States, Congressional Budget Office, December, 2006.