

ECONOMIC GROWTH  
AND  
LABOUR PARTICIPATION IN IRAN

Ahmed Kooros

The prevailing independent variables in the homogeneous and linear function of economic growth, ever since classical economists conceived of it, have been capital, K, labour, N, and, including all natural resources, L. Capital is accumulated by channelling part of the current output, Y, from present consumption to productive uses. The rate of growth of labour is related to the rate of growth of population. Land and natural resources are distinguished from other factors of production by virtue of the indestructible forces inherent in them. Factors of production are usually regarded as continuously substitutable and in general, all changes in relative prices and in the composition of output are assumed away. Specifically,  $Y = AK^{\alpha}N^{\beta}L^{\gamma}e^{\int_0^t g(t)dt}$  when  $\alpha, \beta, \gamma$  are constant elasticities of output with respect to capital, labour and land. As a shift factor, the term A is a constant so that a change in A causes a shift in the curve paralleled to itself the term  $e^{\int_0^t g(t)dt}$  stands for the technical progress factor. In this production function the entrepreneurship factor is omitted, a serious but not a fatal omission. Although entrepreneurship is the stumbling block in the way of development, it can be imported. Thus one can argue that, in a way, the technical progress term in the above production function is inclusive of entrepreneurial ability. Another serious and fatal omission is the fact that different stages of economic expansion cannot be separated from one another by a reference to the above production function. Rostow has divided the process of economic development of all societies into five stages: (1) the traditional societies, (2) the preconditions for take-off, (3) the take-off, (4) the derive to maturity, and (5) the age of high mass consumption.<sup>1</sup>

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1. W.W. Rostow, *The stages of Economic Growth* (Cambridge, Mass: Harvard University Press, 1960).

Unless one imposes conditions on Y, K, N and L, the above classical-neo-classical production function is, *prima facie*, inadequate in describing the stage of economic development wherein any economy operates. On the other hand, the advantageous aspect of the stage theory of economic growth is that it forces one to focus attention on the requirements needed to move from one stage of economic achievement to another and yet higher one. For instance, I have argued elsewhere<sup>2</sup> that a high level of per capita income is associated with the kind of educational structure needed to support the avalanche of capital inputs. An educational system and its supply of skilled resources must be attuned to the needs of different stages of economic well-being.

#### Labour Participation and Economic Expansion

It is only logical to expect that countries with similar economic and cultural backgrounds should have the same pattern of labour participation. Of course, institutional constraints and different habits of thought impede progress and distort labour participation. Empirical evidence demonstrates clearly that labour force participation for different age groups is a function of the degree of economic development, institutional barriers, and mental preparedness. Here we have discerned the pattern of labour participation by examining a number of countries and comparing the results with those for Irān.

Before embarking on a comparison of figures, the meaning of economic development must be brought to focus. We must bear in mind that one cannot differentiate very clearly between a fully developed country and a developing one. Some have contended that a \$1,000 per capita GNP is a fair line of demarcation between a hypotensive economy and a mature one but it is not quite clear as to why this particular per capita level of income could be a relevant measure of development. It appears that any indicator which one takes in order to measure expansion is, in the final analysis, subject to debate. Included in this whirlpool is the International Labour Office's suggestion that a country with more than 45 per cent of its labour force in agriculture is to be considered developing.<sup>3</sup> According to this index, Irān is now a

2. In a paper to be given at the summer meeting of the Econometric Society in the U.S.A.

3. See James N. Ypsilanti, *World and Regional Estimates and Projections of Labour Force*, International Labour Office, Figure 1 and Table E pp. 14 - 15.

developing country. Table 1 indicates that in 1966, about 46 per cent of Iran's active labour force was in agriculture. But according to the census taken in 1956, this ratio was around 56 per cent. It is not too inaccurate to suggest, that in the very foreseeable future, Irān will join the league of the developed nations if this index is an acceptable yardstick.

Table I  
Sectoral Employment Ratios

Major sectors	1956*		1966*	
	Per cent	Number	Per cent	Number
Agriculture	56.4	3,330	46.2	3,167
Industry	20.1	1,190	27.1	1,857
Services	<u>23.5</u>	<u>1,390</u>	<u>26.7</u>	<u>1,833</u>
	100.0	5,910	100.0	6,858

Sources:

\*The 1956 Census

\*\*The 1966 Census

The data on Irān's labour force participation are taken from the 1966 census and are presented for six age groups: 15 - 19, 20 - 24, 25 - 44, 45 - 54, 55 - 64, and finally 65 years and over. Then, in accordance with Ettòre Denti's procedure, an economic activity rate is computed for each age-specific group and each sex.<sup>4</sup> The activity rate is defined as the percentage of economically active persons among the population of a given age group. For example, the age-specific activity rate (R) for the 15 - 19 group is calculated by the formula  $R(15 - 19) = \frac{LF(15 - 19)}{P(15 - 19)} \cdot 100$  where LF stands for the number of economically active persons in the specified age group and P is the total number of persons in that age group.<sup>5</sup> Then these rates for different specific age groups for males, females and males-females are compared with the parallel results Denti has obtained in an investigation of 40 developed

4. "Sex - Age Patterns of Labour Force Participation by Urban and Rural Populations" *International Labour Review*, vol 98, No. 6, December 1968, pp. 525 - 550.

5. *Ibid.*, p. 527.

and developing countries. His definition of development, as in this paper, is the percentage of the labour force in agriculture.

#### Urban and Rural Male Labour Force

The male labour force is the backbone of the labour force within a given country and its characteristics can more readily be relied upon as a basis for comparison. The female labour force's behaviour tends to reflect social custom and institutional idiosyncrasies.

Table 2 compares Irān's average urban male age specific activity rates with those of some thirteen developed countries and twenty-seven developing countries. A quick glance at figures in this table indicates that Irān's male activity rates are closer, in general, to the rates of the developed countries than to the developing ones.

Specifically it is interesting to note that the 15 - 19 and 25 - 44 age groups rates in Irān are similar to the rates for developing countries. The 25 - 44 age group is the pivotal point of the labour force in a given country. If we look back at Table 1, it would not be too hard to believe that the labour force in Irān is approaching the stage of maturity which could enable the economy to march ahead towards real development.

Table 2  
Average Urban Male-Age Specific Activity Rates  
by Level of Economic Development

Age group (years)	Irān *	Average activity rate	
		13 developed countries#	27 developing countries#
15-19	48.6	48.3	54.3
20-24	85.9	82.3	84.5
25-44	96.3	96.0	95.6
45-54	91.6	94.1	94.1
55-64	74.3	82.9	82.4
65 and over	45.5	86.3	51.6

Sources:

\* - 1966 census of Irān

# - Denti *op. cit.* p. 528

Table 3 compares the same rates for Irān with the rates for various geographical areas. In this case no unique pattern emerges but, in general, the rates for Irān are closer to rates for the Western European countries than to any other rates. There is no clear-cut and discernable pattern when one compares Irān's experience with labour participation with other regions.

Table 3  
Average Urban Male Age-Specific Activity Rates by Region

Region	15-19	20-24	25-44	45-54	55-64	65 and over
Irān	48.6	85.9	96.3	91.6	74.3	45.5
Africa	44.1	81.2	92.1	89.5	80.7	50.0
North America	41.3	85.4	95.5	93.5	83.6	28.1
Latin America	56.3	87.5	95.8	94.8	87.6	60.6
Asia	48.7	81.1	95.8	93.8	77.3	43.6
Eastern Europe	52.9	83.1	96.7	94.6	79.2	40.4
The Rest of Europe	56.1	81.6	96.6	95.1	83.1	34.2

Source: For Irān, 1966 census, and for other regions, Denti *op.cit.* p. 530.

Table 4 gives the average rural male age-specific activity rates for Irān, thirteen developed countries and twenty-seven developing countries. It is quite obvious that for the first categories of age groups, Irān's rural male performance is similar to those in less developed countries, but for people over 45 our rural male labour force is not different to that of developed countries. Apparently, the declining activity rates for working people over 55 in Irān, like those in developed countries and unlike less developed countries, is due to changes in the social structure of the rural society. There is no doubt that the Land Reform in Irān has done a great deal in giving the rural people the developing mentality which Irān needs so much.

It seems that the Land Reform has been more influential on the older people in the rural areas than the younger ones and it is something of a paradox that younger people in rural areas are less responsive to social changes than the older ones. A sociologist can perhaps give an explanation.

According to Table 5, the rural male working people in Irān are more comparable to those in Eastern Europe and Latin America than to the Asians and African rural male working people.

Table 4  
Average Rural Male Age-Specific Activity Rates by Level of  
Economic Development

Age group (years)	Iran <sup>*</sup>	Average activity rate	
		13 developed countries <sup>#</sup>	27 developing countries <sup>#</sup>
15-19	84.7	60.3	79.1
20-24	96.-	90.1	93.6
25-44	98.2	96.4	97.6
45-54	95.3	95.3	96.9
55-64	81.7	87.4	91.5
65 and over	47.5	49.2	68.5

Sources:

\* - 1966 census of Irān

# - Denti *op. cit.* p. 532

Table 5  
Average Rural Male Age-Specific  
Activity Rates by Region

Region	15-19	20-24	25-44	45-54	55-64	65 and over
Iran	84.7	96.0	98.2	95.3	81.7	47.5
Asia	70.9	92.0	97.3	96.2	87.3	56.7
Africa	60.8	85.4	95.3	95.3	90.5	68.8
Eastern Europe	76.8	94.2	98.6	98.1	92.5	71.4
The Rest of Europe	74.7	91.1	97.8	96.6	89.6	49.5
North America	41.7	88.6	92.5	90.5	80.0	30.0
Latin America	80.2	95.3	97.4	96.9	93.5	74.9

Source: Figures for Irān are from Table 3 and the data for other regions are from Denti *op.cit.* p.532

Table 6 gives the differences between the male age-specific activity rates in urban and rural areas of Irān. In general the activity rates are higher in the rural areas than in the urban areas. Secondly, the male workers

aged 15 to 24 work more in the agrarian setting than in a metropolitan environment. However I think that if one were to use the number of hours spent in working rather than the number of people in a given geographical area, the picture would be different. At times rural male workers are unemployed six out of the twelve months of every year. It is hard to believe that actual activity rates are higher in agriculture than in cities.

Table 6  
Urban-Rural Differences in Male Age-Specific  
Activity Rates in Irān

Age group (years)	Urban	Rural
15-19	48.6	84.7
20-24	88.9	96.0
25-44	96.3	98.2
45-54	91.6	95.3
55-64	74.3	81.7
65 and over	45.5	47.5

Source: 1966 census

#### Rural Female Labour Force

The female labour force behaves generally according to institutional configurations and mores. It tends in the demographic context, to be less progressive than the male sex. There are those like Madame Simone de Beauvoir, the author of the *Second Sex*, who feel that history has placed women in the position of the second sex so in any society which anachronistically advocates patriarchy, one should expect that women, within that framework, would not behave dynamically. Irān was a patriarchal society for a long time and it still remains part of the male psychology of this country to wish for the upper hand. It has been said that the movement for the emancipation of women has shattered the bonds of second class citizenship, but the road to complete equality is long and arduous. Unless we accept the concept of equality and behave accordingly, we will never realize the stage of mature economy. Real development is not possible in the presence of institutional frictions and

barriers.

Table 7 gives the urban female activity rates in Irān and in forty developed and developing countries. The activity rates for different age groups are considerably lower in Irān when compared with other countries. Quite obviously one reason for this is that we do not rely on our female labour force to play an active part in the drive towards economic growth. Since we still think that the place of a woman is in the kitchen, we cannot expect anything more from our women in the labour force than the rates shown in Table 7.

Table 7  
Urban Female Activity Rates in Irān  
and in 40 Selected Countries

Age group (years)	Irān	40 selected countries
15-19	9.8	31.2
20-24	12.1	40.6
25-44	10.4	33.2
45-54	11.0	31.5
55-64	8.9	23.2
65 and over	5.7	9.9

Source: For Irān 1966 census and for 40 countries Denti *op.cit.* p. 537.

Table 8 compares the activity rates for the urban women in Irān with those of other countries. It is not surprising, and not coincidental, that the urban female activity rates for Japan, the U.S.A. and the Western European countries are quite high for 15-19, 20-24 and 45-54 age groups. These comprise the developed nations of our contemporary era. Thus it can be argued that economic prosperity is correlative with women's participation in the task of economic development although there is no reason to establish a chain of cause and effect between the two entities.

Table 9 compares Irān's rural female activity rates with those in forty developed and developing countries, and Table 10 gives urban-rural differences in female age-specific activity rates in Irān.

Table 8  
Female Activity Rates for Urban Areas in Irān  
and Various Regions

Regions and Countries	Age group					
	15-19	20-24	15-44	45-54	55-64	65 and over
Irān	9.8	12.1	10.4	11.0	8.9	5.7
Western Europe	48.8	61.6	39.4	42.2	34.2	8.4
Japan	50.3	66.4	44.1	45.3	34.2	15.2
U.S.A.	30.8	48.3	41.6	50.3	38.3	11.3
Latin American Countries	27.9	34.9	30.5	25.2	17.7	9.4
India & Indonesia	17.4	25.0	32.1	30.6	22.3	10.0

Source: Denti *op. cit.* p.539.

Table 9  
Rural Female Activity Rates in Irān  
and in 40 Selected Countries

Age group (years)	Irān	40 countries
15-19	19.8	33.9
20-24	15.6	36.3
25-44	13.7	33.6
45-54	11.7	34.4
55-64	7.5	29.0
65 and over	3.9	16.5

Source: Denti *op. cit.* p.541

Table 10  
 Urban-Rural Differences in Female Age-Specific  
 Activity Rates in Irān

Age group (years)	Urban	Rural
15-19	9.8	19.8
20-24	12.1	15.6
25-44	10.4	13.7
45-54	11.0	11.7
55-64	8.9	7.5
65 and over	5.7	3.9

Source: 1966 census.

Even in rural areas, there is a vivid difference between Irānian women's participation and that of other developed and developing countries although *prima facie* there should not be such a difference. The conflict between urban-rural female rates is due to differences in institutions, for a twenty-five year old on the farm is used to the idea of working for subsistence.

#### Conclusion

The real inadequacy of the neo-classical production function is in the fact that the structure of factors of production are taken as given. But it is not really correct to leave the composition of a factor unexplained. In fact, shifts in the production function can occur only when the structure of a given input changes. The shift factor in the neo-classical production function is the constant of integration independent of the essence of factors, and it is usually assumed to be the technological factor. Kalder vis-a-vis Solow has for many years declared that technology is a built in and inseparable quality of a factor. If this is the case, then the partial derivatives of the production function in terms of inputs cannot be integrated. Thus, there will be no constant which can be called the shift parameter and a change in the structure of a factor can shift the curve of a graph to the right or left.

I have argued that a change in the pattern of labour participation can modify the economic viability of a factor. And a change in the pattern of

labour participation can, in Rostow's terms, position an economy at a stage of economic growth different from the previous one. Of course, one may argue that a given level of economic activity of necessity generates its own compatible pattern of labour behaviour. Sociologists and political economists may not entirely agree with this because they define economic status in terms of economic intelligence and claim that the latter constitutes the very foundation of economic growth. According to our findings on labour participation in Irān, it is possible to ascertain certain patterns in economic activity rates according to the geographical, social, and cultural characteristics, and the level of economic development of the country. We have noted that in Irān the male labour force is less influenced than the female labour force by national social customs, and that the pattern of labour force participation fluctuates less in rural areas than in urban areas. The oscillatory behaviour of female participation is due to institutional expectations. It was also noted that the Land Reform had a better reception among older people than the younger ones in rural areas. The Department of Labour in Irān has a formidable task before it, for changes in labour participation are needed in order to promote our economy to a higher stage of growth.

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