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Editors: E.P. Delia, E.J. Scicluna, E.L. Zammit

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THE DEVELOPMENT OF PERSONNEL MANAGEMENT

By Edward L. Zammit

The role of personnel management in industry is as old as the industrial revolution. In the words of F.W. Taylor “the duty of enforcing the adoption of standards and of enforcing cooperation (among workmen) rests with the management alone”. It was in 1899 that Taylor explained the ‘science of shovelling’ as a result of which a workman was taught to shovel forty-seven tons of pig iron daily instead of merely twelve and a half tons.

It is well known how every aspect of this simple job was controlled in detail by management so as to achieve the desired results. Indeed few men can be expected to survive for long under such conditions. Taylor himself has noted that ‘one of the very first requirements for a man who is fit to handle pig iron as a regular occupation is that he more nearly resembles an ox than any other type’¹. Similar conclusions had been reached by Adam Smith, one hundred and fifty years earlier.

Yet the establishment of personnel specialists as a distinct managerial operation is a relatively recent phenomenon in industry. In the U.K., for instance, it has been estimated that by the beginning of the Second World War there were merely 1,800 personnel specialists eligible to join the Institute of Personnel Management. However, this number soon grew to 5,000 by 1945 and to 13,000 by 1969. By the late seventies their number had grown to about 20,000². These are distributed in approximately 46% of all medium sized and large companies. In the case of enterprises which are subsidiaries of larger companies, there are 71% of establishments with a specialist personnel function³.

These developments are usually related to the following inter-linked factors:

- (a) *size effect*: “as establishments grow in size they tend to employ specialists to cater for their personnel problems” as means of greater management control;
- (b) *organisational rationale*: “personnel specialists can be seen as a symptom of the more general bureaucratization of management”
- (c) *union pressure*: “union density, union recognition, various features of steward recognition and the experience of industrial action...are associated with the existence of personnel specialists” and
- (d) *external pressure*: “legislation has led to a greater role for the personnel function”⁴

Therefore, the increased role of personnel management is seen as a managerial response to a wide range of factors and situations. For this reason, the role normally reflects involvement in an equally wide ranging set of tasks and issues. Armstrong lists the following tasks:

Manpower planning — the preparation of manpower budgets; forecasting future deficits and surpluses, specifying requirements; recording and analysing information on labour turnover, absenteeism and movements between the different levels and parts of the organisation.

Recruitment — requisitioning; the preparation of job specification; advertising; interviewing; selection; fixing terms and conditions of employment.

Employment — induction arrangements; fixing hours of work and shift and night duties; overtime arrangements; recording working hours; leave of absence; holiday arrangements and pay; flexi-time arrangements; promotion, transfer and redundancy procedures; fulfilling employment legislation requirements.

Training — selecting personnel for courses; administrative arrangements on courses; following-up training; recording training carried out and the costs of training.

Performance appraisal — appraisal forms; reporting arrangements; counselling methods.

Wages and payment by result systems — fixing and altering wage rates and premium or other special payments; job evaluation; fixing and amending bonus or piece rates; payment of day rate; average earnings or lieu rates in particular circumstances (e.g. on transfer, new work, waiting time, special duties, or when a piece rate is in dispute).

Salary administration — fixing salary levels on appointment, transfer or promotion; job evaluation; reviewing salaries; salary budgets.

Industrial relations — procedural agreements, including negotiating rights, closed shop arrangements, bargaining units, election of shop stewards and their rights, disputes procedure disciplinary procedure, arrangements with regard to the status quo.

Joint consultation — terms of reference; election arrangements; preparation of agenda and publication of minutes.

Communication — briefing employees; using media.

Health and safety — safety rules and regulations; arrangements for reporting incidents; inspection procedures.

Welfare — arrangements for counselling and sick visiting.⁵

In short, the role of the personnel function is to provide advice, services and functional guidance which will enable management to deal effectively with all matters concerning the employment of people and the relationships between the management of the organization and the people it employs such a role provides a wide scope for conflict and uncertainties. Being placed in such a complex 'service' situation, it is not surprising that personnel managers often manifest symptoms of status insecurity and bureaucratic defence mechanisms. As Ducker has commented: The constant worry of all personnel administrators is their ability to prove that they are making a contribution to the enterprise. Their preoccupation is with the search for a 'gimmick' that will impress their managerial associates. Their persistent complaint is that they lack status⁶.

Lloyd Stanley^{6a} has stressed that the 'civil service' syndrome which characterizes personnel managers in public and parastatal enterprises raises these problems to a more critical level.

In these circumstances, it is useful to examine briefly in the remaining part of this paper two currently prevailing types of management styles in public and private enterprises and to contrast these with an alternative line of development of managerial roles. The first two types shall be labelled as a 'traditional - authoritarian' and a 'bargaining - coping' role. These correspond to a 'unitary' and a 'pluralistic' model of the work organization respectively⁷. These shall then be contrasted with a proposed 'moderator - leadership' managerial role in a 'participative' organizational structure which it is argued, is better suited to confront the problems of role conflict and status anxiety as well as the range of problems referred to in the paper by Lloyd Stanley.

(a) The Traditional - authoritarian managerial role in a unitary model of work organization.

This management type manifests by its behaviour a belief in a unified legitimate command over the whole organization structure and no other source of power (e.g. trade union power) is regarded as legitimate. In its dealings with subordinates a 'paternalistic' attitude and a family ideology may well be adopted. No other focus of loyalty is acceptable and the ideal labour force is encouraged to remain relatively docile and quiescent. In such a context "The union is apt to be seen as a purely external, self-seeking force trying to assert itself into an otherwise integrated and unified system"⁸

The implications of such views for the course of action adopted by personnel management are clear. As an integral part of management, personnel specialists enjoy managerial prerogatives and they are also expected to ensure that these prerogatives remain

unchallenged. If a trade union is reluctantly recognised, every attempt is made to control it and to use it so as to strengthen the hold of management. Any infringement by the labour force of the official directives, after the required warnings and admonitions have been issued, necessitates automatic resort to disciplinary procedures. The predominance of these ideas in the past partly explains the relatively recent introduction of personnel management in most enterprises.

(b) The Bargaining - coping managerial role in a pluralistic model of work organization.

This management type manifests in its behaviour a realistic recognition of other sources of power and legitimacy in enterprises apart from the official locus of power derived from state authority and the rights of legal ownership. In a realistic adaptation to prevailing circumstances, collective bargaining becomes established by management and union as a form of joint regulation over labour issues. In the bargaining process many compromises have to be made in order to reach solutions which are acceptable to both parties. From management's point of view there are now severe constraints on its freedom of action 'in the best interests of the enterprise' as it sees them. The traditional managerial prerogative is no longer unqualified but undergoes some important limitations. As Fox states: "The increasing size and social complexity of work organizations; shifts in power relations within industry; changes in social values; rising aspirations; the weakening of traditional deference towards officially constituted governance — these were among the factors increasingly said to require managers to develop a new ideology and new sources of legitimation if they were to maintain effective control."⁹

Under these circumstances, the role of personnel managers is placed in a very hot seat around the negotiating table. Relics of the 'paternalist' tradition as well as the demands of expediency necessitate a certain attitude of concern with individual and group welfare of the labour force. On the other hand, other managers and superiors may enforce organizational demands in response to market pressures. The successful personnel manager is one who manages to somehow cope with these conflicts. There are no clear-cut criteria which measure how well they perform their task of balancing conflicting interests. All too often conflict reaches above a minimum acceptable level which manifests that "the ground rules need changing that management is failing in some ways to find the appropriate compromises or syntheses"¹⁰.

(c) The moderator - leadership managerial role in a participative model of work organization.

This management type is built around a 'coalition' view of the enterprise where the various groups comprising it pursue their own mutually compatible goals. In order to do so they require a broad distribution of power and reward structure. When the workers participate directly in the taking of all decisions concerning the enterprise, they may contribute important viewpoints to new initiatives being proposed and to problem solving. The traditional managerial viewpoint tends to be restricted to a hierarchical, top-bottom view. Worker participation may provide complementary views.

In this set-up the role of personnel management becomes that of a professional moderator who also leads towards workable solutions to problems which arise. In this context, the provision of workers' education, the opening of new communication channels and, above all, the smooth running of participatory structures at the middle and shop floor levels of organization (e.g. works committees, quality circles) may be included among the most important tasks of the personnel managers. As this involves a radically different concept of the enterprise than the traditional hierarchical one, a policy of transition is required and in the implementation of such policies, again personnel specialists may play a leading role.

The international experience suggests that the demand for workers' participation rarely emerges from the workforce itself. On the contrary an intervention "from above" has often been a necessary condition for its introduction.¹¹

In this respect, the role of focal point agencies in the introduction of participatory experimentation becomes vital. This is the proposed direction that the "small rudder" (Trimtab") proposed by Somasundram should steer for.¹²

Paper presented at an international seminar on 'Focal Point Agencies and Public Enterprises' organized by Commonwealth Secretariat (U.K.) and International Centre for Public Enterprises (Ljubljana, Yugoslavia) and Malta Development Corporation, Malta, May 1986.

NOTES:

1. Taylor (1911), passim
2. Batstone (1984), p.38
3. Ibid.
4. Ibid.
5. Armstrong (1984), pp.21-23
6. Ducker (1955) quoted in Armstrong, (1984) p.23
- 6a. Stanley Lloyd (1986)
7. These models are inspired by the writing of Fox (1974 (a)) and Fox (1974 (b))
8. Fox (1974b), p.135
9. Fox (1974a), p.258
10. Ibid., p.262.
11. Kester and Thomas (1981).
12. Somasundram (1985).

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FACTORS AFFECTING THE SIZE OF THE MALTESE LABOUR FORCE

by Carmel Inguanez and Lino Briguglio

The purpose of this paper is to describe the most important factors that affect the size of the Maltese labour force¹ and to quantify the impact of these factors by means of a simple econometric model.

The labour force as defined here is made up of all those persons who are gainfully employed, or who are actively seeking employment and officially registered as such.

The Working-Age Population

The size of the labour force is undoubtedly related to the size of the working-age population. It is often assumed that a change in this variable would bring about a proportional change in the size of the labour force. The ratio of the labour force to the population is usually termed the "Participation Rate".

However the labour force does not grow only due to population changes. There are short run and long run factors which affect the size of the labour force given that the working-age population remains constant. For example during the past five years in Malta, the labour force tended to decrease whereas the working-age population did not, indicating that there were short term factors at work. Again, the average rate of growth of the Maltese female labour force during the past 25 years was much faster than that of the female working-age population, suggesting that in the long run, factors other than the working-age population affect the size of the female labour force.

Short Run Economic Conditions

A look at the Maltese labour force statistics would indicate that the fastest increases in the size of the labour force occurred during periods of rapid economic growth. On the other hand during periods of economic stagnation, the size of the labour force tended to be stable, or to decrease. This suggests that the number of persons willing to work tended to be influenced by short run economic conditions.

At low levels of economic activity, difficulties or costs of finding a job tend to increase, and persons that would otherwise seek employment, may give up searching for a job and opt out of the labour force. In economic literature this is termed the "Discouraged worker" effect.

It is possible also that short run economic conditions have the opposite effect, namely that at times of low economic activity, certain members of the family, other than the normal breadwinner, seek to join the labour force to supplement family income if the normal breadwinner loses his job or experiences a reduction of wages. In economic literature this is termed the "Added Worker" effect. The

discouraged and added worker effects may operate simultaneously, and the net impact depends on which of the two effects is the stronger.

Wage Rates and the Labour Force

Another factor thought to effect the size of the labour force are wage rates. According to "price-theory" economics, the labour supplier would attempt to combine units of market work (work in exchange for wages) and non-market work (including leisure) in order to maximize utility. Theoretically there are two effects of a change in wage rates. The first is termed the "substitution effect" which prompts the labour supplier to perform more market work as the wage rate increases, since the return from market work in such an event increases when compared with that from non-market work.

The second effect is called the "income effect" which prompts the labour supplier to perform less market work as the wage rates increases, since in such an event the labour supplier's income increases and he would therefore be able to afford more leisure. Thus with an increase in wage rates, the substitution effect tends to increase labour supply and the income effect to decrease it. The net outcome depends on the relative strengths of these two effects.

Generally speaking, when labour supply is measured by the size of the labour force, wage rates are found to have very little effect on the male labour force, since males are generally expected to form part of the labour force irrespective of the prevailing wage rate. On the other hand, wage rates are often found to have an impact on the size of the female labour force, indicating that in this case the substitution effect tends to predominate.

Attitudinal Changes

Other factors which affect the size of the labour force are attitudinal changes, which in turn are influenced by such factors as education, health, religious affiliation, etc.² In the case of Malta, these factors are likely to be of some importance with respect to the female component of the labour force, since the attitudes of females towards joining the labour force may have changed significantly during the past twenty five years.

It is probable that the most important factor in this respect is the increase in employment opportunities for females, which has come about as a result of the expansion of the manufacturing sector, particularly the clothing and the electrical machinery industries. These industries have provided new jobs considered suitable for female employment.

Before the sixties, the major openings for female employment were teaching and nursing, which required a relatively large amount of training and job commitment, or personal services such as house-

cleaning, which was not always considered respectable. On the other hand, factory work, which increased rapidly during the sixties and the seventies, does not require much training and long-term job commitment, and at the same time tends to be more respectable than the work of a chambermaid. The presence of employment opportunities in the manufacturing sector has probably had a bearing on changes in the social attitudes towards female participation in the labour force.

A Description of the Data

In this section we shall describe the data to be used for quantifying a labour force equation. The data is presented as annual observations in the data appendix, which also gives the source. Only the most important changes will be described here. Where appropriate, these changes are quantified as annual average rates of growth³, and illustrated by means of diagrams.

Figure 1 shows how the *labour force* changed between 1960 and 1984. It can be noted that the gap between the male and the female component of the labour force has tended to narrow over the years. Table 1 presents the average annual rates of change during five five-yearly sub-periods and during the whole 25 year period.

Figure 1: The Maltese Labour Force (Thousands)

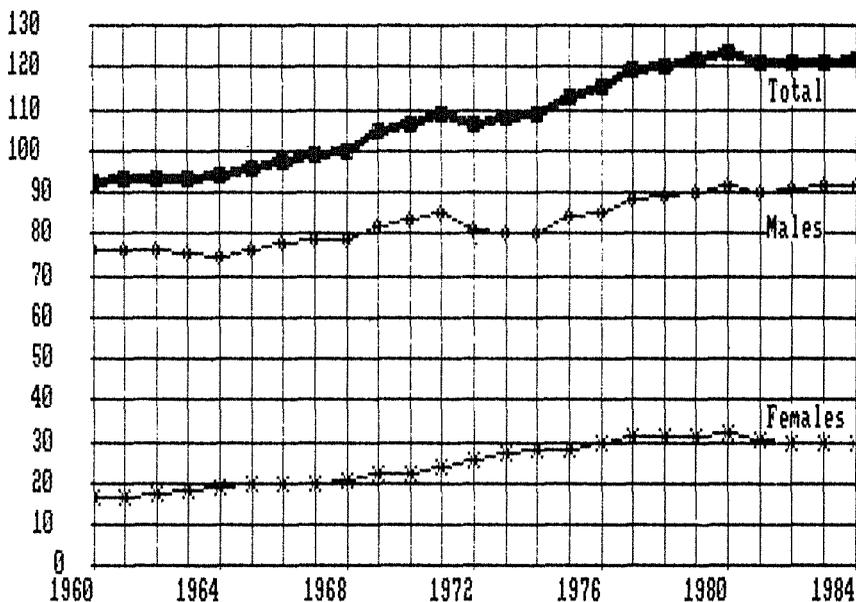


Table 1: THE LABOUR FORCE: Annual Average Percentage Growth Rates

	1960-64	1965-69	1970-74	1975-79	1980-84	1960-84
Males	-0.54	1.73	-1.25	1.71	0.17*	0.94
Females	3.89	2.69	5.56	2.76	-1.8	2.93
Total	0.31	1.96	0.36*	1.98	-0.32*	1.38

* Indicates that the estimate was not different from zero at the 95% level of statistical significance.

It can be seen from the table that the fastest rates of increase of the total labour force occurred during the second half of the sixties and of the seventies. This is also true with respect to the male labour force. These periods were characterised by fast rates of economic growth, and low rates of unemployment.⁴ On the other hand, during the first half of the sixties, of the seventies and of the eighties, the total labour force and its male components grew at very slow rates or even decreased.

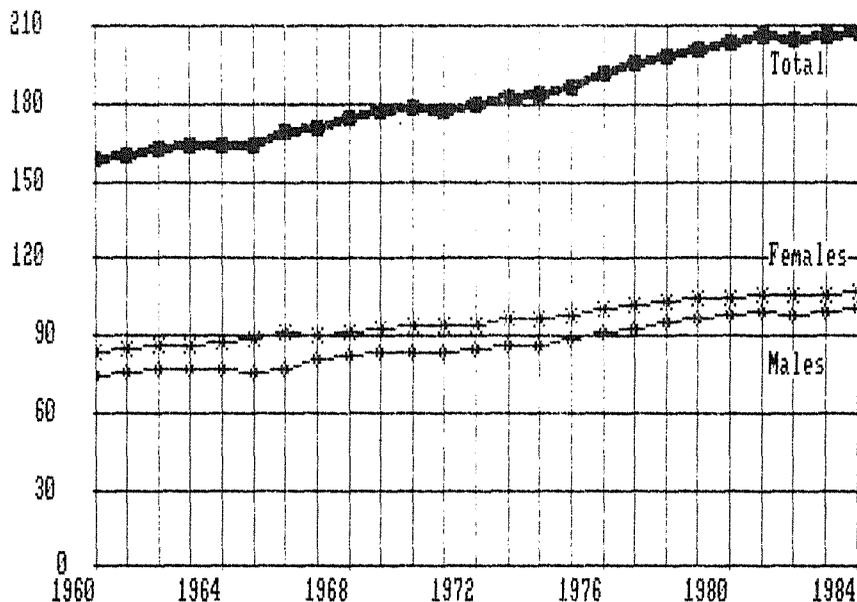
The female labour force however has increased most rapidly during the first half of the seventies, when the economy tended to stagnate. It should be noted however that during this period, industries which offered suitable employment opportunities for female labour increased their share of manufacturing sector, and this probably explains why the female labour force continued to grow during this period.

An important variable affecting the size of the labour force is the *working-age population*. Changes in this variable are given in Table 2 and Figure 2. For the purpose of this study, the working age population is measured as the number of persons aged over 15 and up to sixty.⁵

Table 2: WORKING-AGE POPULATION: Annual Average Percentage Growth Rates

	1960-64	1965-69	1970-74	1975-79	1980-84	1960-84
Males	0.62	2.47	0.75	2.19	0.51	1.38
Females	1.37	1.10	0.84	1.35	0.50	1.06
Total	1.00	1.74	0.80	1.75	0.51	1.21

Figure 2: The Working Age Population (Thousands)



The table shows that the Maltese working age population has tended to increase during all sub-periods, with the slowest increases occurring during the first half of the three decades. These slow growth rates were partly caused by the relatively high rates of emigration during these sub-periods.

As argued earlier, *short run economic conditions*, which affect short run employment opportunities are likely to effect the size of the labour force. In this paper, as is the case with many studies on the labour force, the rate of unemployment is used as a proxy variable for short run economic conditions.⁶

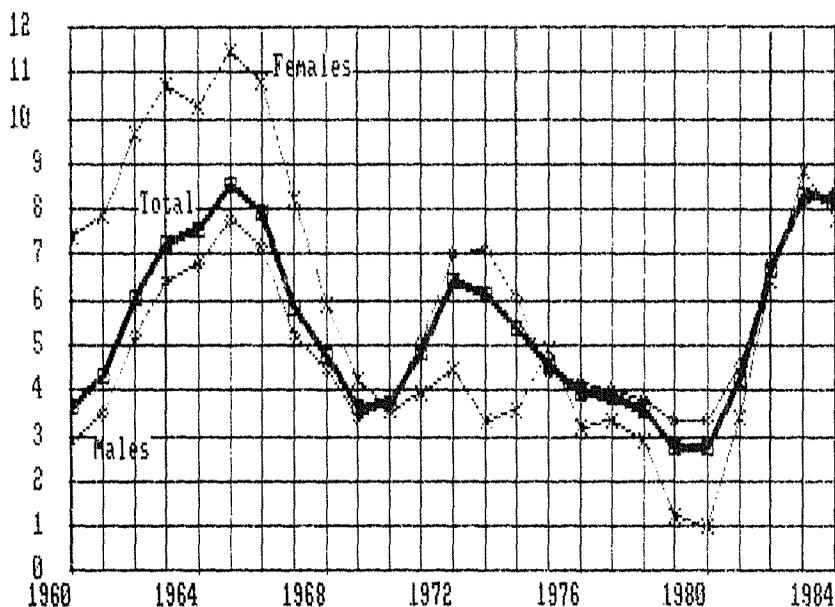
Table 3 and Figure 3 show how the rates of unemployment changed during the period under consideration.

Table 3: UNEMPLOYMENT RATES: Annual Average Percentage Growth Rates

	1960-64	1965-69	1970-74	1975-79	1980-84	1960-84
Males	22.55	-21.04	13.01	-7.00	24.11	0.50*
Females	9.71	-25.66	-2.12*	-28.54	49.83	-4.68
Total	19.69	-22.63	9.93*	-10.83	28.50	-0.70*

* indicates that the estimate was not different from zero at the 95% level of statistical significance.

Figure 3: Unemployment Rates (%)



It can be seen that during the first half of each decade, the rates of unemployment tended to increase at very fast rates, indicating that these periods were characterised by an increasingly slack labour market. This suggests that during these periods, short run economic conditions decreased employment opportunities.

On the other hand, during the second half of the sixties and of the seventies the rates of unemployment tended to decrease, indicating that these periods were characterised by an increasingly tight labour market.

Changes in wage rates are shown in Figure 4 and Table 4. Wage rates are measured in real terms, and based on the average hourly wage rate for production workers.⁷

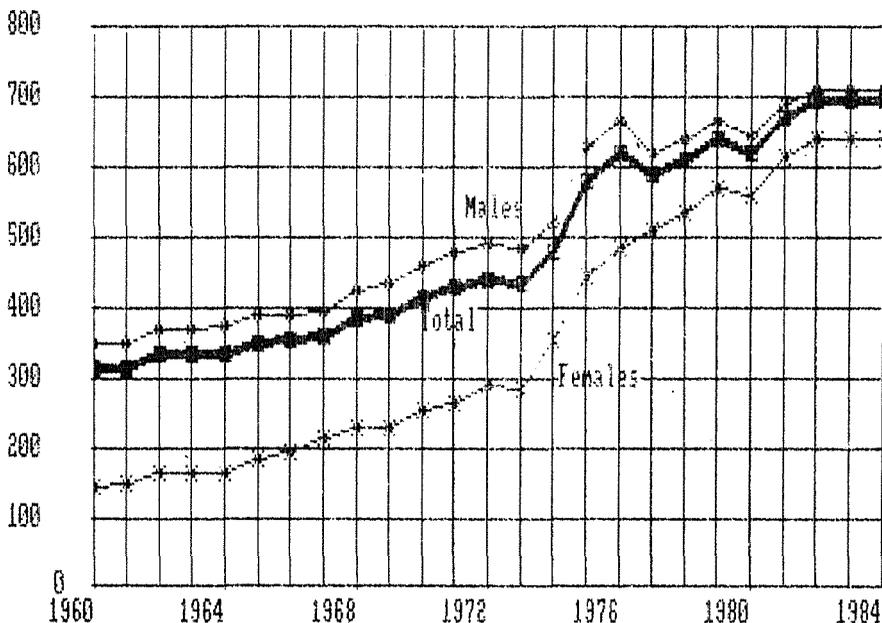
It can be seen from the table that wage rates tended to increase during all sub-periods, with the fastest increases going to female workers. This has given rise to a reduction of the gap between male and female wage rates during the period under consideration. This can be confirmed from Figure 4 which shows that in the early sixties, the average wage of female workers was about 40% of that of male workers. During the early seventies this percentage rose to about a 50%, and by the early eighties it reached 90%.

Table 4: WAGE RATES: Annual Average Percentage Growth Rates

	1960-64	1965-69	1970-74	1975-79	1980-84	1960-84
Males	2.09	2.92	2.65	0.66*	2.36	3.47
Females	4.15	5.99	7.68	5.90	3.10	7.21
Total	1.84	3.09	2.88	1.71*	2.60	3.88

*indicates that the estimate was not different from zero at the 95% level of statistical significance.

Figure 4: Average Annual Real Wage Rates (Lm)



As suggested earlier, social attitudes towards females joining the labour force are likely to be influenced by long run female employment opportunities, everything else remaining constant. In Malta, the growth of the Textile, Clothing, Electrical-Machinery and Miscellaneous (TCEM) industries have provided considerable scope for female employment. Female employment in these industries was probably influenced by the ratio of female to male wage rates, since employing a female rather than a male as, for example a machine operator, tends to become less attractive as female wage rates rise in relation to male wage rates.

The long run female employment opportunities index that we shall use in this study is a composite index reflecting the ratio of

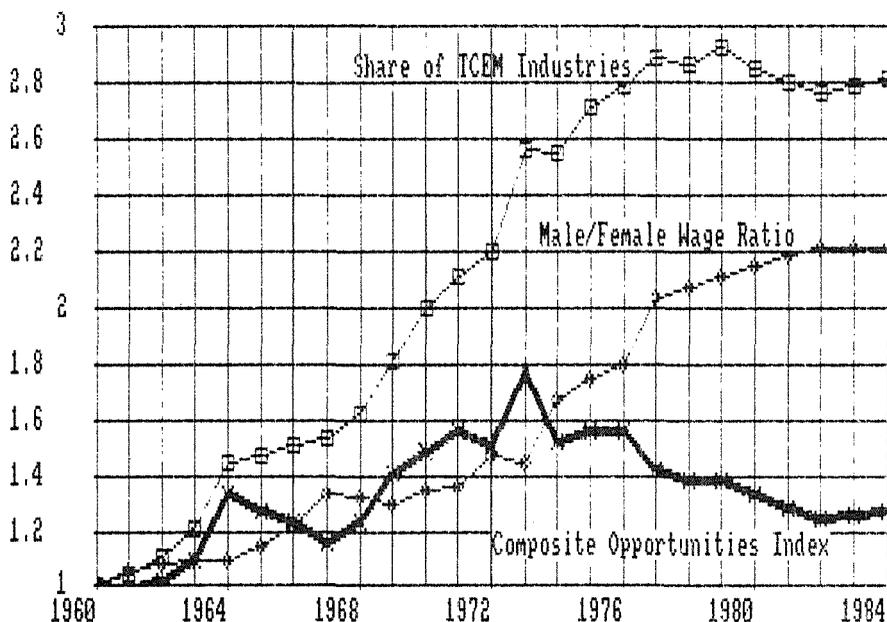
employment in the TCEM industries to that in the total Manufacturing Sector, and the ratio of female to male wage-rates. Changes in these variables are shown in Table 5 and Figure 5. The values in Figure 5 are indexed with the values for 1960 set to equal unity.

Table 5: FEMALE EMPLOYMENT OPPORTUNITIES INDEX
Annual Average Percentage Growth Rates

	1960-64	1965-69	1970-74	1975-79	1980-84	1960-84
TCEM Ratio	8.82	5.03	6.88	1.80	-0.40*	4.70
Wage Ratio	2.12	3.14	5.14	5.20	0.71	3.72
Composite	6.71	1.92*	1.82*	-3.42	-1.12*	1.00

* indicates that the estimate was not different from zero at the 95% level of statistical significance.

Figure 5: Female Employment Opportunities

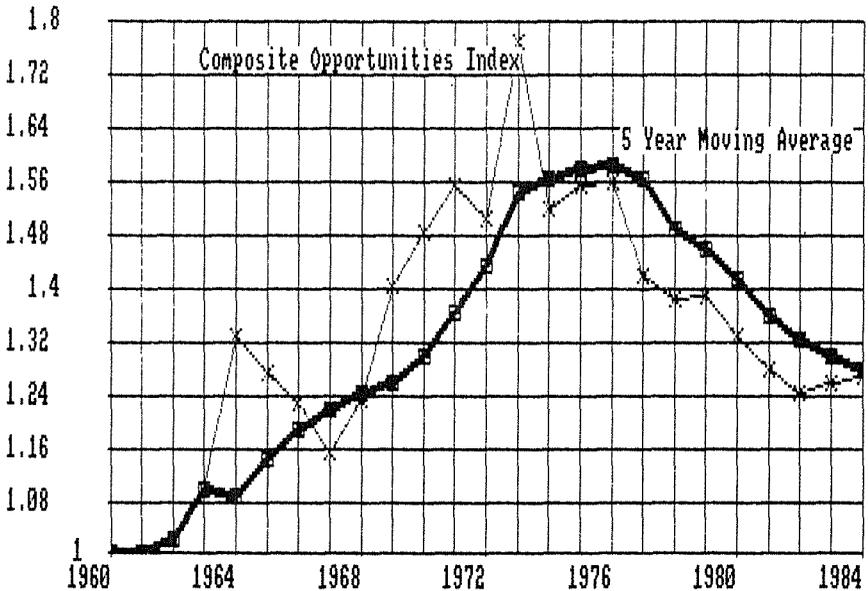


The estimates in Table 5 indicate that the TCEM industries have had a growing share of the manufacturing sector up to 1979, but the rate of increase tended to slow down. The ratio of female to male wage rate tended to increase during the 25 year period.

The composite index indicates that there was a rapid increase in

female employment opportunities in the early sixties, and that after 1975, female employment opportunities tended to decrease, due to the rapid increase in female wage rates and the slow down of the expansion of the share of TCEM industries. Since the composite index is intended to capture long run factors affecting the female labour force participation rates, it was considered appropriate to take a five year moving average to reduce the effect of short term variations⁸. The five year moving average is presented in figure 6.

Figure 6: Female Employment Opportunities



The Labour Force Equation

The basic equations for the aggregate labour force and its male and female components are the following:

$$L_{at} = P_{gt}^a W_{gt}^b U_{gt}^c O_{gt}^d V_{gt} \quad (1)$$

$$L_{mt} = P_{mt}^a W_{mt}^b U_{mt}^c V_{mt} \quad (2)$$

$$L_{ft} = P_{ft}^a W_{ft}^b U_{ft}^c O_{ft}^d V_{ft} \quad (3)$$

where

L = the size of the labour force P = the size of the working-age population

W = the average real wage rate

U = the unemployment rate O = female employment opportunities V = random factors affecting the labour force

force

The subscripts g , m and f indicate that the variables belong to the aggregate, male and female labour force respectively. The subscript t indicates that all variables are measured over time, in our case annually, as shown in the data appendix.

The exponents a , b , c and d measure the elasticities of the labour force with respect to the variables on the right hand side of the equations.

In the case of the aggregate labour force (equation (1)) we expect the exponent a , which measures the working-age population elasticity, to be positive and approximately equal to unity, indicating that the labour force tends to grow in proportion to the working-age population, everything else remaining constant. This is also true for the male labour force (equation (2)) and female labour force (equation (3)) with regard to their respective working-age population.

The real wage elasticity, represented by the exponent b , is likely to be different for males and females. In the case of the male labour force, the value of b is expected to be not significantly different from zero, since the probability of a male joining the labour force is not likely to depend on wage rates. On the other hand, the probability of a female joining the labour force may be influenced by wage rates, since non-market work, such as house work, tends to become less attractive as the wage rate increases. In the case of the aggregate labour force, b would represent some form of weighted average of the male and female elasticities.

In the aggregate labour force equation, we expect c , the elasticity with respect to the rate of unemployment, to be negative, because of the "discouraged worker" effect. In many studies, the "discouraged worker" effect is found to predominate in the case of the male labour force, and therefore the value of c in equation (2) is likely to be negative also. The value of c with respect to the female labour force may be positive or negative, depending on whether the "added worker" or the "discouraged worker" effect predominates.

The elasticity of the female labour force and to a lesser extent of the aggregate labour force with respect to female employment opportunities, d , is expected to be positive, since these tend to favourably affect attitudes regarding labour force participation.

Estimation Results

The Ordinary Least Squares method of regression was used to estimate the elasticities of the three labour force equations. The results are shown in table 6.

Table 6: REGRESSION RESULTS: Estimates of Elasticities

	Elasticity with respect to:				R ²	D.W.
	P	W	U	O		
Aggregate	0.85 (5.5)	0.06 (1.3)	-0.03 (3.7)	0.07 (2.6)	0.99	1.32
Male	0.70 (22.2)	—	-0.03 (-2.4)	—	0.96	1.52
Female	1.02 (2.52)	0.14 (2.42)	-0.03 (-2.63)	0.46 (7.85)	0.99	1.38

The estimates have the expected signs and magnitudes, and with the exception of one estimate are all statistically significant at the 95% level, as indicated by the “t” statistic shown in brackets under the estimates. The correlation coefficient R² is high in the three equations, and the Durbin Watson statistic (DW) suggests that there is no serious incidence of autocorrelation.

The estimated elasticity of the female labour force with respect to the working-age population is approximately unity, everything else remaining equal. This indicates that this labour force grouping increased proportionately to the working age population as expected. The population elasticity for the male labour force is somewhat smaller than unity, possibly reflecting the fact that the male labour force may have to a small extent also responded to changes in the population outside the 15 to 60 year bracket, which are not considered in the equation.

The estimated elasticity of the aggregate labour force with respect to the rate of unemployment suggests that the labour force tended to decrease by 0.3% as the unemployment rate increased by 10%, other things remaining constant. As already argued this was probably due to the predominance of the “discouraged worker” effect. This “discouraged worker” effect also tended to predominate in the case of the male and female components of the labour force.⁹

The estimated elasticity of the aggregate labour force with respect to wage rates suggests that the labour force increased by 0.6% with a 10% increase in the average wage-rate. The response is therefore very small¹⁰. The wage elasticity for the male labour force was found not to differ significantly from zero, and the equation was re-estimated without it. The wage elasticity for the female labour force shows that the female labour force tended to increase by 1.4% as the female wage-rates increased by 10% and this suggests that the response of the aggregate labour force therefore is a weighted response of its female component.

As indicated earlier, the presence of female employment opportunities was measured by means of a composite index, smoothed out to capture long term trends. The estimated elasticity with respect to this variable indicates that female employment opportunities have had a significant effect on the growth of the female labour force. These opportunities have had a significant, but smaller, effect on the aggregate labour force.

Policy Implications

The estimates suggest that the labour force increased almost proportionately with the size of the working age population. This means that unemployment can be reduced, everything else remaining constant, by reducing the size of the working age population, by way of, for example, a reduction in retirement age.

The finding that the “discouraged worker” effect predominated suggests that as soon as economic conditions deteriorate in the short run, the labour force tends to decrease, and the official unemployment rates would tend to be lower than they would have been otherwise. As already stated, one reason for this is that a proportion of the unemployed would tend not involve themselves in active search for jobs in such conditions.

On the other hand, when economic conditions improve in the short run, the size of the labour force tends to increase, thereby increasing the labour force and the official unemployment rates would tend to be higher than they would have been otherwise. This means that as the economy grows and labour demand increases, unemployment might not decrease by the same amount as the increase in labour demand, since persons who would have stayed out of the labour force in bad times, enter the labour force due to better employment opportunities.

The estimates suggest also that as wage rates increase, the female labour force tends to increase, thereby also increasing the aggregate labour force. This means that a policy of increasing wage rates would tend to increase unemployment, everything remaining constant. According to the estimates, the female labour force tends to increase also as female employment opportunities increase.

In other words, keeping the population constant, the male labour force is not likely to expand in the long run, whereas the female labour force is likely to increase due to higher wage rates and due to long run female employment opportunities. This conforms to what has been observed in the past with respect to female participation rates (the ratio of the female labour force to the female working-age population) in Malta, which has tended to increase at a faster rate than the male participation rates.

On the basis of the above estimates, one may attempt to quantify the future size of the labour force, given changes in certain key variables. For example assuming that in future years the male and female working-age population grows by 1% per annum, that real wage rates of males and females grow by 3%, and that everything else remains constant, the male labour force would grow by approximately 0.7% per annum and the female labour force would grow by approximately 1.6% per annum in the long run. By the end of the century therefore the female labour force would reach about 40 thousand and the male labour force would reach about 104 thousand. The aggregate labour force would therefore reach 144 thousand, an increase of about 1.0% per annum over its 1984 level.

*Dr. L. Briguglio is Lecturer in Economics, The University of Malta.
C. Inguanez is Administrative Officer, Maltese Civil Service*

NOTES

1. There is a considerable amount of literature on the factors affecting the size of the labour force in other countries. See for example Bowen and Finegan (1966), Mincer (1962), Standing (1978) and Corry and Roberts (1974).
2. On this question see Briguglio (1982) and Inguanez (1984).
3. The equation used to estimate the rates of growth is $Y = Ae^{rt}$ where Y is the variable whose rate of growth was estimated and t is time taking values of 1,2,3,.....,T, according to the number of years. The rate of growth is given by "r" and it was estimated using the Ordinary Least Squares Method of Regression. The test of significance of the estimate was conducted on the basis of the Student "t" distribution.
4. See Briguglio (1982) for a discussion of the most important changes in the Maltese economy since 1955.
5. The data used for the working-age population was taken from Inguanez (1984) which utilised adjusted data from the Annual Abstract of Statistics. See Op. Cit. p. 33 and pp. 68-69.
6. The rate of unemployment is used for this purpose in many studies on the labour force. See for example Bowen and Finegan (1966) and Corry and Roberts (1974). It should be pointed out here that for official purposes, the number of unemployed persons in Malta includes only those considered as such on Part 1 of the unemployment register. The 12 month average number of unemployed persons was used as a measure of yearly unemployment, since this statistic may be a better indicator of unemployment than the December figure. However the estimates produced by the December unemployment figure did not vary much from those appearing in Table 3. The model to be proposed later utilises the twelve month average number of unemployed persons.

7. The weighted aggregate wage rate was computed by the following formula:

$$(H_t \times 52) \times \frac{(W_{m t} \times E_{m t}) + (W_{f t} \times E_{f t})}{E_{m t} + E_{f t}}$$

where $W_{m t}$ and $W_{f t}$ stand for the male and female hourly basic wage rates in year t , $E_{f t}$ and $E_{m t}$ stand for male and female employment in year t , and H_t stands for the average weekly hours of work in year t . The male, female and average weighted wage rates were deflated by the consumer price index with base-year 1960. For a more detailed description of how the weighted wage rate was computed see Inguanez (1984), pp. 30-31.

8. The five-year average was chosen after some experimentation regarding the highest statistical significance of the index as an explanatory variable in the female labour force equation.
9. This would seem to contradict an earlier finding in Inguanez (1984) where the unemployment rate was not found to enter significantly in the female labour force equation. It should be noted however that the present study covers the years 1983 and 1984, whereas Inguanez's (1984) does not. These years were characterised by high rates of unemployment, which made it more possible to test the "discouraged worker" effect hypothesis. Also this study utilises different indices of female short run and long run employment opportunities.
10. Although only statistically significant at the 80% level, the wage variable was retained in the aggregate equation. Its exclusion did not make much difference in the results of the aggregate equation.

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Year	Labour Force			End Year Unemployment			Average (12 month) Unemployment			Employment in Manu- factures	Employ- ment in TCEM*
	Total	Male	Female	Total	Male	Female	Total	Male	Female		
1960	92462	75984	16478	3772	2464	1308	3395	2177	1218	14960	2150
1961	93587	76537	17050	4367	2897	1470	4026	2691	1335	15130	2270
1962	93176	75819	17357	6356	4559	1797	5646	3968	1678	15570	2490
1963	93095	75072	18023	7015	4992	2023	6785	4851	1934	16550	2860
1964	94175	74692	19483	7645	5452	2193	7998	5104	1995	17400	3620
1965	95979	76025	19954	7859	5595	2264	8201	5919	2282	18130	3820
1966	97364	77513	19851	6584	4673	1911	7718	5581	2137	18870	4100
1967	98697	78603	20094	5387	3873	1514	5740	4083	1658	19660	4330
1968	100019	78924	21095	4199	3104	1095	4768	3518	1250	20320	4760
1969	104273	82137	22136	3813	3047	766	3788	2842	946	22790	5950
1970	106122	83377	22745	4962	4007	955	3920	3102	818	24010	6880
1971	109005	85092	23913	5925	4842	1083	5305	4352	953	25480	7750
1972	106768	81468	25300	6360	5308	1052	6880	5755	1125	27080	8588
1973	107875	80345	27530	4894	4122	772	6644	5730	913	30798	11373
1974	108595	80604	27991	6285	4897	1388	5848	4856	992	30519	11188
1975	112778	84501	28277	4964	3745	1219	5132	3739	1393	31287	12237
1976	115416	85516	29833	4831	3824	1007	4523	3563	960	33196	13339
1977	119554	88266	31206	5057	3647	1410	4621	3572	1048	36483	15169
1978	120355	88965	31398	4196	3399	797	4268	3349	919	37913	15655
1979	121633	90272	31623	3294	2994	300	3386	2994	392	39219	16535
1980	123651	91867	31908	4039	3455	584	3432	3100	331	39583	16280
1981	120841	90100	30741	5680	4315	1365	5137	4086	1051	37775	15251
1982	120843	91079	29764	10356	7846	2510	8086	6172	1914	34707	13793
1983	120922	91311	29611	10283	7517	2766	10088	7471	2617	34111	13687
1984	121762	92055	29707	10448	8128	2320	10037	7721	2315	34118	13818

Source: Annual Abstract of Statistics (Various Issues)

* TCEM = Textile, Clothing (including Footwear), Electrical Machinery and Miscellaneous Manufacturing Industries.

HOURLY WAGE RATE			EMPLOYMENT		Average Weekly Hours of Work	Consumer Price Index	POPULATION		
Cents per hr. Males	Cents per hr. Females	Males ('000s)	Females ('000s)	Total ('000s)	Males ('000s)	Females ('000s)	Total ('000s)	Males ('000s)	Females ('000s)
14.3	5.8	73.5	15.2	158.4	46.75	1.000	158.4	74.7	83.4
14.6	6.25	73.6	15.6	160.4	46.75	1.019	160.4	75.7	84.5
15.2	6.7	71.3	15.6	162.9	46.75	1.000	162.9	76.6	86.3
15.1	6.7	70.1	16.0	163.8	46.75	0.991	163.8	77.0	86.8
15.4	6.8	69.2	17.3	164.5	46.75	1.000	164.5	76.4	88.1
16.3	7.6	70.4	17.7	164.4	46.50	1.009	164.4	76.1	88.3
16.7	8.3	72.8	18.0	169.1	45.75	1.019	169.1	77.4	91.7
16.9	9.1	74.7	18.6	171.1	46.00	1.029	171.1	81.0	90.1
18.9	10.1	75.8	20.0	174.1	45.50	1.056	174.1	82.5	91.5
20.6	10.8	79.1	21.4	176.8	44.25	1.093	176.8	83.4	93.4
23.1	12.6	79.4	21.8	178.4	43.25	1.130	178.4	83.9	94.4
24.5	13.5	80.3	22.8	177.6	43.00	1.148	177.6	84.1	93.5
26.1	15.5	76.2	24.3	179.7	42.50	1.185	179.7	85.2	94.5
28.8	16.9	76.2	26.8	182.2	42.00	1.296	182.2	85.9	96.3
35.0	23.8	75.7	26.6	183.2	41.25	1.442	183.2	86.2	97.0
40.7	28.8	80.8	27.1	186.7	44.75	1.510	186.7	88.3	98.4
48.4	35.2	81.7	28.8	192.0	41.00	1.547	192.0	91.3	100.7
50.8	42.0	84.6	29.8	195.3	40.00	1.711	195.3	93.3	102.0
54.4	45.7	85.6	30.6	197.8	40.00	1.773	197.8	94.8	103.0
60.6	51.9	87.3	31.3	200.8	40.00	1.902	200.8	96.7	104.1
68.1	59.4	88.4	31.3	202.8	40.00	2.204	202.8	98.2	104.6
78.1	69.4	85.8	29.4	205.5	40.00	2.353	205.5	99.9	105.6
85.6	76.9	83.2	27.3	204.2	40.00	2.500	204.2	98.6	105.6
85.6	76.9	83.8	26.8	206.5	40.00	2.472	206.5	100.0	106.5
85.6	76.9	83.9	27.4	207.5	40.00	2.462	207.5	100.7	106.8

Source: Annual Abstract of Statistics (Various Issues)

IMPLEMENTING ADMINISTRATIVE REFORMS LINKED TO ECONOMIC CHANGES: THE CASE OF MALTA

by Edward Warrington

Introduction

The history of Maltese public administration is marked by periodic attempts at a root-and-branch reform of the rapidly-growing civil service. The latest sustained effort lasted between 1972 and 1981. Because of its duration and the range of changes introduced, the reform qualifies as an important formative period for the public service.

The Reorganisation, as it has come to be known, took place in the context of an 'economic crisis' that has preoccupied Maltese policy-makers since the late 'fifties. Throughout the period, successive administrations have struggled with the problem of disengaging Malta from its fortress role and launching a viable economy. In 1971 the problem acquired a new urgency when the newly-elected Labour administration negotiated the final closure of the British Naval Base which was set at 31st March 1979. In the course of the decade, the economic problem was compounded by the effects of the Oil Crisis and the later downturn and recession.

Thus, the objective of civil service reform were stated as follows in 1971:

- to prepare the civil service to assume a leading role in development;
- to re-orient decision-making in the direction of centralization and control; and
- to contain numbers and costs.¹

Side by side with the economic undercurrents, other forces were at work in the interests of reform. The change of government in 1971 brought with it not only a new set of policies and priorities: the incoming administration was characterised by an ideological approach to government and by a reliance on the charismatic leadership of the Premier.

The Labour Party came to power at a time when industrial development was beginning to make its effect felt on the social structure and the balance of social forces on the Island. A new middle class of managerial, engineering and technical personnel was taking shape and the industrial proletariat expanding greatly. New forms of political organization other than the traditional parties — trade unions, professional associations and special interest groups — came

into being to articulate the demands and interests of the classes. All of these organisations challenged the traditional prestige and pre-eminence of the civil service among the country's institutions, even as they demanded fresh initiatives, services and programmes from the public sector.

The growing size and responsibilities of the civil service were also transforming it from within. Organisational cohesion diminished under the influx of specialist and professional staff and as new organisations were created. Internal strains found expression in a degree of union militancy which was directed as much against competing unions as against government as employer. Throughout the sixties, under the pressure of union activism, civil service salaries and benefits kept pace with the rising industrial sector and the declining British defence establishment.

It was in this context of urgent economic problems and against a background of changing social and political structures, that the objectives and plans for civil service reform were laid. Throughout the seventies and eighties the surging tide of change continued transforming every facet of life on the Island. Remarkably, though development has produced severe strains that are expressed in the political arena, the country has enjoyed more than two decades of political stability and steady economic growth. This is a tribute to the resilience and adaptability of the traditional basic institutions: family unit, close-knit secular communities and Church.

The decades since Independence can be characterised, above all, as a period of institution-building which is at the heart of national development. It is in relation to this task of institution-building that the civil service Reorganisation must be evaluated.

An Agenda for Reform: Economic Changes

The distinguishing characteristic of the Labour administration's economic policy over the past 15 years has been the considerable expansion of the influence and activities of the public sector in the economic life of the country. The underlying assumption is that in the state of economic development obtaining since Independence, the private sector is unable to mobilize resources on the scale necessary to promote growth.

Government has assumed a leading position in the economic life of the country in four physical ways:

- a) by close regulation of commerce, industrial enterprises and financial markets and institutions;
- b) by extending state ownership and control over public utilities,

telecommunications, shipping and aviation, financial institutions and the import of vital commodities;

c) by setting up state-owned enterprises of a commercial, industrial or agricultural nature;

d) by developing the country's infrastructure, chiefly, power, water, roads, harbours, airport and internal and external telecommunications.

Though the groundwork for the public sector's development along these lines was being laid down in the years immediately prior to and after Independence, the scope and scale of these activities reached its full implementation during the seventies. As the largest and most important organisation in the public sector, the civil service played and continues to play the leading role in this sector's development and, indeed, in national development.

An Agenda for Reform: Administrative Changes

The objectives of administrative reform were clearly stated in the Labour Party's Manifesto for the 1971 elections. The first difficulty emerged in translating these statements into operational policy. The Manifesto spoke only of the appointment of two commissions to carry through the reorganisation, without elaborating on their terms of references.²

The principal tasks with regard to reform could be stated thus;

- a reappraisal of departmental organisation;
- the expansion of the range of specialisations among key professional, technical and managerial personnel;
- the rationalisation of the vast pool of direct labour employed by the civil service (then approximately 8,000 among a total public workforce of 20,000).

In addition, the new economic policies required the centralisation of decision-making and the strengthening of control over departmental activities. This meant more than the rigorous application of traditional mechanisms of accountability; the discretionary use of authority by permanent officials was to be curtailed and top-down approach adopted in policy-making.

The containment of costs and numbers could potentially conflict with the expansion of the civil service's role. In the event, a total freeze on recruitment was imposed.

In spite of the diverse declarations, the agenda for reform remained unclear, a fact which hindered the work of the newly-appointed Commission on the Reorganisation of the Public Service.

The Reorganisation Begins

The Commission was to make recommendations on the pay, grading and benefit structures and on manning levels in the public service. In addressing its terms of reference, the Commission was required to examine technical issues such as staffing and job classification and other sensitive issues of pay and benefits that would normally be the subject of collective bargaining.

The Commission comprised about thirty members. It was chaired by a senior career civil servant and included equal numbers of representatives of each of the main departments and of the four principal public service unions. The unions represented distinct constituencies³ and brought to the Commission very diverse interests and a degree of rivalry. The Commission was serviced by a small secretariat located in the central personnel management agency (the Establishments Division of the Office of the Prime Minister).

The technical elements of the Commission's work, particularly the assessment of manning levels, which required work study experts, were delegated to a management unit in the central personnel agency which had been set up a few years before to introduce modern management techniques in the public service. In an organisation where the tradition of the 'gifted amateur' was revered, however, the unit's influence was limited.

The Commission was unable to function as a non-partisan, collective body. Work proceeded fitfully. Two committees were formed: one to oversee the manning exercise; the other to report on pay and benefits. The latter succeeded in formulating a comprehensive report on conditions of civil service employment. However, towards the end of 1972, the white-collar unions sought to press their demands outside the Commission and initiated industrial action. It became impossible for the Commission's work to proceed and it was quietly wound up. A year passed before any fresh initiatives were announced.

A Second Try: Collective Bargaining

At the beginning of 1974, Government and unions agreed that each union would negotiate its pay, grading and benefits claims independently of the others. Existing pay relativities would not be disturbed and the unions would cooperate in the realisation of the government's productivity goals.⁴

There followed a brisk series of negotiations, in the course of which the pay and grading of different groups was considerably restructured. Between 1974 and 1976 the administrative, clerical, industrial, teaching, paramedical and technical employees were reorganised. The reorganisations of professional staffs was delayed by a lengthy

industrial dispute between Government and the doctors. Thereafter, until 1981, the tempo of negotiations slowed somewhat. The doctors' dispute led to a considerable souring of relations between the Administration and the Confederation of Trade Unions.⁵

The negotiations accomplished the following;

- the simplification of the grading structure by the merger of related grades;
- a redefinition of salary scales applicable to the new grades; by the late seventies, however, public sector pay lagged behind private sector salaries;
- the opening up of career paths by the abolition of 'dead-end' grades and promotion 'ceilings'.

Negotiations on job descriptions were never finalised, and ambiguities in the definition and operation of the merit principle in promotion remained unclarified.

Despite the novelty of the approach, the negotiations underlined the limitations of co-opting unions into the process of institutional reform. In the course of the decade, the negotiations became increasingly divorced from the economic issues underlying the reforms. Fundamental questions concerning departmental organisation, decision-making processes, the management of policy and the audit of implementation could not be tackled through collective bargaining.

Departmental Organisation, Management and Control

Concurrently with the negotiations on manpower, a number of organisations within the civil service launched their own initiatives in this sphere of reform. The ever-expanding programme of public investment in infrastructural development and industrial or commercial enterprises required the introduction of new management techniques and mechanisms of evaluation and control. Revenue was expanded to meet the growing expenditures, both through the improvement of collection procedures and through the development of new sources. The Ministry of Finance took the initiative in the sphere.

The Ministry experimented with programme budgeting. It encouraged the development of the state audit services and assisted the Inland Revenue and Treasury departments to tighten control over revenue and expenditure. Later in the decade, the Ministry launched the first sustained attempt at the mechanisation of clerical functions, an initiative which led to the establishment of an Electronic Data Processing (EDP) policy and a data-processing agency for the public sector.

Throughout the seventies, too, several attempts were made to rationalise ministerial portfolios. As public investment grew in many economic sectors, the ministries of development and industry assumed greater importance. In 1976, a separate Ministry of Parastatal and People's Investments came into being, to formulate policy for, coordinate and control, this growing breed of organisations. Economic planning reached its apogee during the seventies with the formulation of a seven-year plan that was given quasi-legal status by Parliament.

In some respects, however, the emphasis on rationality does not fully accord with the reality of decision-making, implementation and control. Political control exercised directly and personally by ministers and their political staffs, is the preferred instrument for securing accountability, though officials regard it as intrusive and dysfunctional. There is a tendency to rely on instinct and native ability rather than on analysis and judgement. Informal networks growing around significant individuals and working around and through the established organisations exercise inordinate influence on policy implementation.

The Outcome of Reorganisation

While the seventies may be characterised as a period of wide-ranging reform, it cannot be claimed that the several initiatives coalesced into a thorough-going, sustained and unified strategy of administrative reform. What can be claimed for the Reorganisation?

On the credit side, the economy has successfully weathered the withdrawal of the British forces from Malta, as well as the subsequent world recession. Growth has been steady and, indeed spectacular, particularly in the second half of the seventies. Substantial foreign assistance has been available, but the authorities have refrained from resorting to questionable economic policies. While the performance of certain sectors remains unsteady and unemployment is high, severe dislocations have been avoided.

In all this, the civil service played the 'leading role' envisaged for it in 1971. The principal economic ministries — Finance, Economic Planning and Trade, and Industry — have regulated the employment-generating sectors and intervened directly in economic activity, sometimes to rescue troubled undertakings, more often to establish significant new ventures. One such case was the take-over of the procurement of essential commodities by the Department of Trade. The civil service has also traditionally undertaken, infrastructural projects, the scale and number of which over the past fifteen years has been staggering. In general, it is only when a venture or project is well-established and viable that it is 'hived-off' into the parastatal sector, or privatised altogether.

On the other hand, there are signs which give rise to concern about the quality of the civil service's performance. The technical input into decision-making is poor or limited. The state audit services repeatedly criticise the mismanagement of funds and other resources, which is attributed to inadequate systems of accounting and control rather than to negligence or deliberate fraud. Representatives of most economic sectors complain of the crushing burdens of administrative regulation and the labyrinthine procedures that are imposed on them. And while, by and large, the civil service has not been sullied by charges of corruption, most clients complain about the indifference and, sometimes, the arrogance of officials. One survey of the socio-political situation has described the country's governing institutions as being caught in the throes of a crisis of confidence.⁶

The effect of certain policies upon the morale of the civil service must be given closer attention. The Reorganisation greatly reduced salary differentials between junior and senior staff and facilitated the promotion of less-qualified officers into the highest ranks of the service. Furthermore, the administrative class, from among whom the policy advisers and programme managers are selected, has lost ground in relation to parastatal and private-sector salaries. The civil service, which is the training ground for many prospective managers,⁷ finds great difficulty in retaining the best personnel. The argument that is advanced against awarding competitive salaries, namely that the high costs of personnel will become untenable, is less than credible.

On the basis of these observations, the picture that emerges is of a civil service that has, thus far, successfully coped with its assigned role in economic development, but which may be running short of crucial resources — skilled staff for policy and programme development, an ethic of service, internal leadership, a sense of professional identity and an unambiguous vision of its role in the Maltese political system (rather than simply in the economy).

Evaluating the Reorganisation

The Reorganisation is only one factor influencing the development and performance of the civil service. It is, however, the most decisive influence, because it was addressed specifically and systematically at the service. The civil service's successful adaptations can be attributed to the flexibility, the emphasis on productivity, the speedy decision-making and the central political control that were the principal innovations of the Reorganization.

The principal failure of the Reorganisation has been in the sphere of institution-building. Government has not acknowledged the civil service as a separate, albeit subordinate, institution of the State. Hence the emphasis on political control of the most insignificant

administrative tasks and with that, the steady erosion of leadership within the service and the progressive loss of professional identity.

The implementation of a thorough-going reform on the scale envisaged in 1971 was hampered in other ways.

First, as pointed out earlier, the broad objectives of civil service reform were never translated into operational policy, partly because the reform was never allocated to a particular agency. Technically, the civil service falls within the Premier's portfolio. However, Establishments Division, the central personnel and management agency, was never unequivocally assigned responsibility for the reform. It merely represented the government in the negotiations on pay, grading and benefits. At one time or another, the Ministries of Finance, Development and Economic Planning assumed responsibility for particular structural or systems reforms. However, the absence of a single authority with broad-based powers and the political backing of the Premier or a senior minister ensured that the several individual initiatives did not coalesce into an all-embracing reform capable of being sustained, controlled and developed.

Implementation was also hampered by an inappropriate choice of policy instruments. The policy on costs and numbers containment was defeated at its inception by the use of a blanket freeze on recruitment that ignored the complexity of the issue. The limitations of collective bargaining as a mechanism for restructuring the workforce have been noted. The appropriateness of the Commission on Reorganisation as an agency for reform must also be questioned.

The choice of policy instrument and the design of operational policies are largely tasks for the permanent officials, acting within a framework of responsibility and accountability. Though, it is tempting to lay the blame at the politicians' doorstep, one must admit that, by accident or design or simply inertia, the civil service failed to live up to its responsibilities in their regard.

The future of Civil Service Reform in Malta

Between 1981 and the present, there have been few significant statements on civil service reform. Critics, within government and outside, are agreed only on the symptoms of malaise, but the diagnosis of the underlying cause is contentious. This author suggests that the present situation is as much a natural consequence of the problems of post-colonial adjustment, as it is due to the failure of Reorganisation.

Any further policy on reform must approach the issue from the broad perspective of institution-building, rather than simply from the managerial or economic perspective of productivity and efficiency, and it will build on the foundation of the Reorganisation, rather than

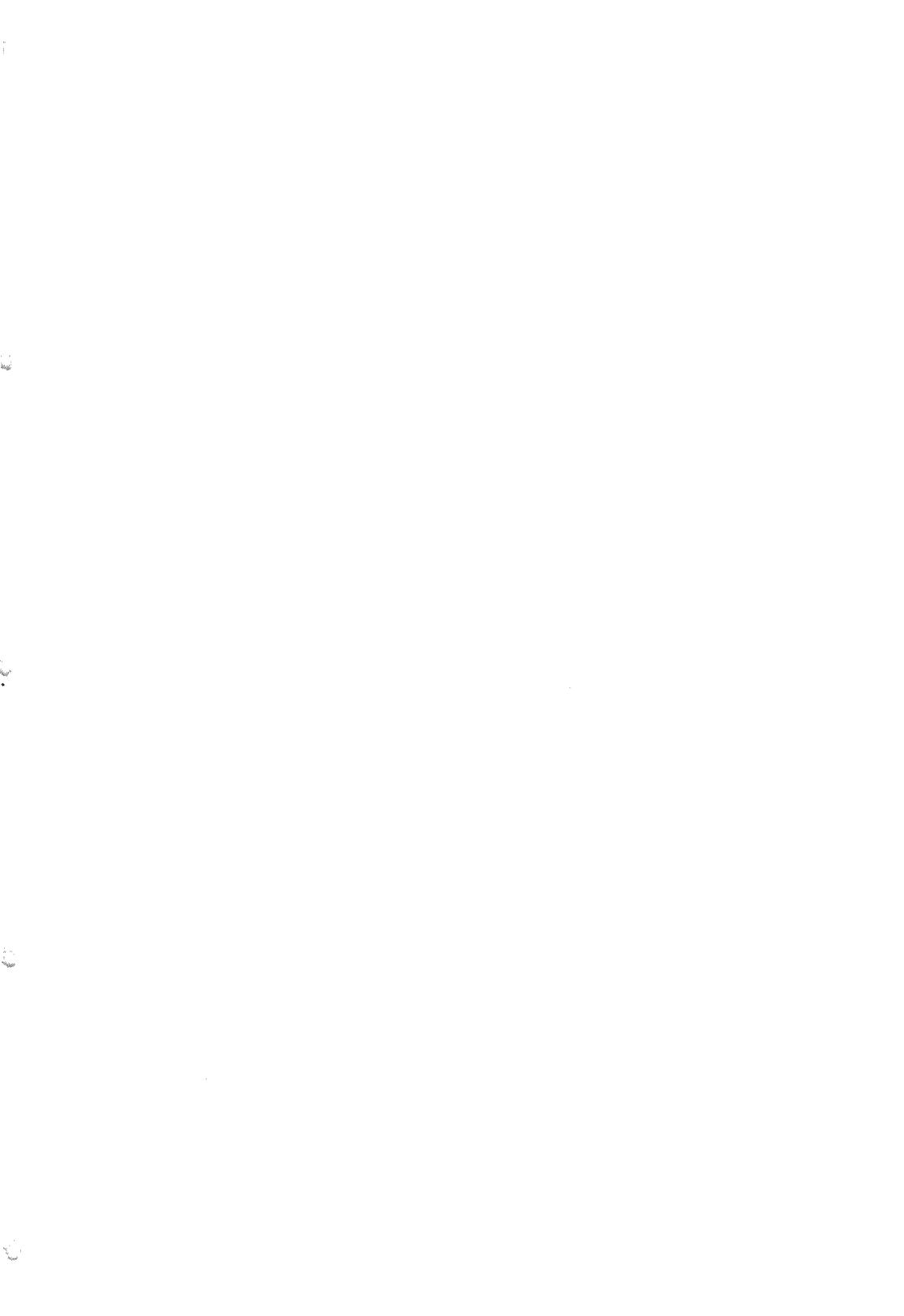
attempt to return to the 'status quo ante' or project into the future the images of an idealised past.

The paper was presented at the XX International Congress of Administrative Sciences held in Amman between the 6 and 10 September 1987.

Edward Warrington is an Administrative Officer, Establishments Division, in the Office of the Prime Minister, Malta, with responsibility for organisation and training.

NOTES

1. Malta Labour Party, *Electoral Manifesto, 1971*. Union Press, Malta, pp 3, 4.
2. Two commissions are mentioned , both of which were subsequently appointed; the Commission on the Reorganisation of the Public Service, and the Commission on Discipline.
3. Of the four unions, the General Workers Union represented the industrial and technical employees; the Malta Union of Teachers represented educational staffs; the Society of Administrative and Executive Civil Servants represented the "upper division" of the General Service; clerical employees were organised in the Malta Government Clerical Union.
4. Cfr. Agreement between the Government of Malta and the Confederation of Malta Trade Unions on the Reorganisation of the Service, signed on 31 December 1973, Establishments Division, Office of the Prime Minister, Malta.
5. This marks the beginning of a serious dispute concerning the government's approach to industrial relations and the implementation of certain sections in the Industrial Relations Act, 1976.
6. Archdiocese of Malta, *Pastoral Plan, 1985*, p.23, Valletta, Malta, 1985.
7. Under the worker-student scheme for tertiary education, Government annually sponsors the studies of students in the Faculty of Management Studies at the University of Malta, and provides them with facilities for obtaining on-the-job training and work experience. On graduation, the students are guaranteed employment in the civil service for the first two years.



A CONTRIBUTION TO INCOME DISTRIBUTION ANALYSIS IN MALTA

by E.P.Delia

Income and wealth distribution statistics constitute an important element in the formulation and assessment of pragmatic and effective economic and social policies. Yet, notwithstanding the unquestionable usefulness of such data - also spelled out in a report by economic advisers to the Maltese Government¹ — and notwithstanding claims regarding the elimination of poverty from the Maltese Islands², data on the size distribution of income and wealth are not readily available. Information on the income and assets of Maltese taxpayers and welfare recipients may be being compiled by the Departments of Inland Revenue and Social Welfare; but, if such data exist, they are not published. For this reason, fragmentary statistics on the wage or income distributions of certain subgroups in the Maltese population assume a relevant significance for socio-economic analysis despite any inherent shortcomings.

This paper presents and evaluates three recent studies which incorporate statistical information on selected wage or income patterns³. It first examines the data sources and the theoretical foundations of the Lorenz-Gini coefficient of concentration when used as a measuring rod for income "inequality". The estimated Gini coefficients, based on the three studies, are introduced and assessed; the paper is concluded by comments for welfare policy based on the results.

The Data Sources

The three references which include data on wage or income distributions are:

- i) a report on a Household Budgetary Survey carried out during 1980-1981 by the Central Office of Statistics, (COS), Malta⁴.
- ii) a paper evaluating social policy in Malta between 1972 and 1980 which includes data provided by the Department of Social Welfare on the distribution of Employees' Wage Income and on the Net Income of the Self-Employed in 1980⁵.
- iii) a report on the characteristics and the life style of the sixty-plus in the Maltese Islands based on a survey undertaken in 1982⁶.

The data considered refer to the years 1980 and 1981; from the time point of view the three studies could be taken to be complementary to each other. The reports were not primarily interested in compiling information on income distribution in Malta, although this was one

main consideration of interest to the author of the second study, Mr P. Kaim-Caudle. The shortcomings in the presentation of the data, discussed below, surely arose because of this. However, given the dearth of statistics on this social sector, it is worth assessing the information contained in the three studies, without, of course, attenuating the limitations imposed by the data on the derivation and the interpretation of the results. The data bases in the reports are examined in turn.

A Household Budgetary Survey, 1980/81

The results of the COS's survey are based on a sample of 1352 households. Included in the survey were households consisting of between two to six persons with not more than two full-time working members, and households whose head had an income between Lm22.88 — the then national minimum wage — and a maximum of Lm40 per week. Excluded were all households whose heads were employers, professional or own-account workers, pensioners or unpaid family helpers.

The survey covered a group of workers whose wage income fell within the wage range selected, a priori, by the COS. The objective of the survey was the derivation of consumption patterns which would yield the fixed weights in the structuring of a new retail price index. The survey collected information on both wages and total income of the households interviewed, but statistical material was published only in terms of the distribution of Gross Wage Income⁷, divided into four wage/salary classes. The data in the report were re-arranged to yield six different coefficients of income concentration in terms of various household sizes, ranging from two-person to six-person units.

Evaluation of Social Policy, 1972-1980

Mr Kaim-Caudle's study submits data on the distribution of wages and net income of employees and the self-employed, respectively. These statistics served as basis for estimating revenue from the National Insurance contributions in 1980; they give rise to two observations.

First, the Gainfully Occupied Population (GOP), in these workings is made up of 97850 employees and 16400 self-employed; a total of 114250. However, the actual GOP was 118832, representing an increase of 4582 on the data provided to Kaim-Caudle. Since there is no way of allocating these "missing" workers between the two categories, we proceed to process the data as presented; the results on wage or net income distribution do not necessarily reflect the 'correct', underlying distribution of earnings of the actual GOP. Of course, it can always be assumed that the distribution of earnings for the "missing" employees or self-employed tally with the distribution pattern inherent in the data provided, but such an assumption would remain conjectural.

Secondly, the data on the self-employed's net income conform to the classification laid down in the two-thirds retirement pension scheme introduced in 1979. They refer to "insurable income options" offered to the self-employed and they need not necessarily correspond directly to the own-workers' true income. In principle, there should be a close relationship between "insurable income" and "own income"; but this does not always happen in practice. The controversy over the practice of charging tax on the self-employed's income through 'ex-officio' tax assessments by the Inland Revenue Department would suggest that declared income for social insurance purposes and real income could differ substantially.

Data are classified into five income brackets. The wage distribution is based on annual pre-tax basic wage income; overtime earnings, commissions, remuneration in kind and any form of bonus are excluded. This definition covers a narrower range of workers' income than that surveyed in the COS's report; the latter includes overtime income, commissions and bonuses. For the self-employed, the information refers to annual pre-tax net income, that is the difference between total revenue from sales and the total costs incurred in running a business or in exercising a profession.

A Survey on the Aged, 1982

Details on the income distribution among Maltese aged sixty and over in 1981, are based on 767 replies to a questionnaire carried out among a randomly selected sample group. 'Income' stands for total revenue of respondents, the primary source being transfers arising from retirement pension schemes or from the non-contributory old age pension scheme. 55% of respondents relied exclusively on pensions for their income.

Nine income groups are included per distribution which is available in respect of the regional distribution of the respondents, their marital status and their past educational attainment. Three sets of Lorenz-Gini coefficients have, accordingly, been worked out.

The main features of the statistical bases in the three studies are summarised in the following table. It is observed that the reports apply different variables for analysis, cover two consuming units, and register differences in the 'robustness' of the data for analytical purposes, being 'strongest' in the *Survey on the Aged* with nine income categories.



Study	Variable	Unit	Income Classes
i) <i>Household Budgetary Survey</i>	Gross Wage Income of Employees	Household	4
ii) <i>Evaluation of Social Policy</i>	Basic Wages for Employees;	Persons	5
	Net Income for Self-Employed	Persons	5
iii) <i>Survey on the Aged</i>	Gross Income	Persons	9

Coefficients of Income Concentration and 'Inequality'

The values worked out for concentration coefficients, such as the Lorenz-Gini, depend on the consuming unit. Data based on personal income yield different ratios of concentration from data based on household income. The derived Lorenz-Gini coefficients presented below are not, therefore, comparable when the consuming unit changes.

Apart from comparative considerations, the choice of the measuring unit assessing the degree of "income inequality" as interpreted from the estimated coefficients reflects the underlying assumptions regarding equality implied in the consuming unit applied. Thus, if households form the unit, including single person units, it is assumed that equality is realised if all households irrespective of size have the same income. However, if equality is defined in terms of persons in families, it follows that children are equivalent to adults and that there are no economies of scale in family units. The variations in the concentration coefficients arising from different consuming units — personal or households — as a base depend upon the correlation between family size and income: if family size and income are positively related, the inequality coefficient decreases as we transfer the base from the number of household units to persons in families; conversely, the coefficient rises if income and family size are inversely related.

Additional information is therefore required before normative connotations may be attributed to an index of concentration and transform it into an index of 'inequality'. It may be argued that the 45 degree line of 'perfect equality', the basis of the Lorenz measure, has only mathematical significance, and no normative consideration should be ascribed to it⁹. Such an interpretation would render the Lorenzian area of inequality void of any meaning as an index of income distribution. To render the Lorenz measure useful for welfare policy, its basic faults have to be identified so that it would be correctly interpreted and applied in the relevant situations.

A fundamental fault of the Lorenz line of equality, based on annual income data, is that it assumes that all units must have equal income in a given year irrespective of their age-income profile. It also rules out the possibility of permitting a household's income to be increased by additional members entering the labour force. Given such underlying assumptions, the Lorenz-Gini becomes a legitimate welfare measure only for groups of comparable individuals, distinguished by age, or for household units with comparable socio-economic characteristics apart from the age of the head.

The classified information on the income distribution of the sixty-plus in Malta, and on the gross distribution of employees, by household, could be rearranged to derive comparable units. Considering the sixty plus as a group, in terms of age, given the past environment within which the present generation of Maltese aged sixty and over was brought up, normative connotations could be attributed to the Lorenz-Gini concentration statuses when these are estimated for the different regions, marital ratios and educational attainment. Similarly, welfare significance may be attached to the Lorenz-Gini results based on households' gross wage distributions when these are estimated for homogeneous units defined by family size whose heads offer their labour services for payments which are tightly demarcated. Wage differentials within, and between comparable, economic activities do not generally depend on the workers' age but on the wage-range related to particular job specifications and the length of time over which a worker is posted to that activity. If the wages' range related to a post is narrow, then age differences would not induce wide disparities in basic wage income distributions.

Such connotations would not be correctly attributed to the Lorenz-Gini coefficients estimated for all employees or own-accounts workers; additional information on the age distribution and the average age-income profiles is necessary for the construction of a new series of concentration coefficients which account for these factors. Presently data are available on the age composition of the Maltese population; what is needed is information on the age structure of the gainfully occupied population and the income by age-group of the GOP. Such information may be included in the published results of the 1985 Census of Population when these become available. The unadjusted Lorenz-Gini coefficients, based on the data submitted in Mr Kaim-Caudle's paper, overstate the degree of income "inequality" because they fail to account for lifetime income patterns, a factor which has to be accounted for when interpretation is made of results.

Estimated Indices of 'Inequality'

The computed Lorenz-Gini coefficients, the mean and the median Income values, based on the three studies as introduced in section 1,

are presented in Tables 1, 3 and 4. The data are self-explanatory and comments are directed to integrate the impressions formed from each set of statistics and, where deemed necessary and possible, to clarify further the normative implication of the concentration coefficients in the light of the problems discussed in the preceeding section.

Distribution of Gross Wage Income: 1980/81

Age-income profiles would form an integral part of income distribution analysis when intertemporal evaluations are undertaken. However, when analysis is carried out in terms of gross wages at any point in time, the possibility has to be considered that wages and salaries are related to a post, and, hence, educational attainment, more closely than they are related to age. This observation becomes more applicable to a sample of workers who, in the survey's organisers' views, represents a socio-economically "homogeneous" group, with a household's income constrained within a restricted band, and the only means whereby the maximum level of income could be exceeded, and the household allowed to participate in the research programme, was through a second wage earned by a second member in the family.

Of course, age differences would be expected to be related to family size. In general, the head of a six-person household would be older than the newly-wed couple represented in the two-person unit category. Income, however, need not depend on age, but, on the job of the respondents. The COS's report does not include matrices correlating the age of the head of households with households' size or economic characteristics of different family heads, with one or two members gainfully active, and their age or income. Information on the age distribution refers to all persons included in the survey; these statistics are not relevant for our analysis.

To render the published information useful, the original data are rearranged in order to yield a set of income distribution concentration coefficients based on family size; these are presented in Table 1. Also

Table 1: Lorenz-Gini Coefficients based on the Household Budgetary Survey undertaken by the COS, Malta, in 1980-1981

Household Unit	Lorenz-Gini	Mean Income	Median Income
		Lm	Lm
2 Person Household	0.174	2137	2158
3 Person Household	0.149	2361	2314
4 Person Household	0.124	2465	2418
5 Person Household	0.213	2536	2491
6 Person Household	0.205	2569	2512
All Households	0.137	2421	2402

Note: Mean and Median values are rounded estimates.

Source: Basic data adapted from COS, Malta, (1984), Table 5.

included are the data for the entire sample, but such results have to be interpreted carefully, since in their case the application of the Lorenz-Gini as an index of 'inequality' stands on weak foundations.

Table 1 suggests that the least inequality of wage distribution within a household category occurred among four-person units, with a Lorenz-Gini equal to 0.124. Inequality was greatest among the five-person households, with a registered Lorenz-Gini of 0.213. These absolute values are not comparatively high; indeed if we consider that the overall, unadjusted, Lorenz-Gini is only 0.137, then the degree of wage income distribution approximates closely to the line of 'perfect equality'. The relatively low divergencies among wages possibly reflect the wages' policy pursued in the seventies of granting flat wage increases which induced, by 1980, a narrowing of wage differentials.¹⁰

The values for the mean and median incomes suggest almost total convergence, thus implying symmetric distributions. The differences between the two parameters observed in Table 1 are low; transformed to a weekly base, as they arise from the original data, the differences become negligible, particularly when the parameters for all households are considered. Generally income distribution functions tend to be non-symmetric, usually positively-skewed.

The observed wage distribution pattern could have arisen either as the outcome of the wages' policy, as suggested, or as a result of the prerequisites on which the Household Budgetary Survey was conducted. The localities selected were meant to provide examples of household units of comparable socio-economic characteristics, and once only employees whose income fell within the identified brackets were interviewed, the possibility of including wide wage differences was automatically excluded.

Table 1 also suggests that wage income and family size are positively correlated; therefore a Lorenz-Gini estimated on an individual rather than a household basis, as in the present instance, would be lower still.

The **total** income distribution, against the **wage** income distribution, represents a different issue altogether. The COS's report points out that wage income falls short of households' expenditure for all units whose wage earnings fall below Lm2600 annually; saving is recorded by households whose wages or salaries were in excess of Lm2600. The other units relied on non-wage income sources to bridge the gap between wage-earnings and consumption, and register saving. The consumption — wage income relationships, reproduced from the COS's report, are presented in Table 2.

Table 2: Income and Expenditure of Households Classified by Economic Groups — 1981

Income & Expenditure	Under Lm30 (Lm)	Lm30-Lm40 (Lm)	Lm40-Lm50 (Lm)	Lm50 plus (Lm)	Total (Lm)
Average Weekly Wage	28.92	31.83	37.22	52.58	40.89
Average Other Weekly Income	3.98	5.61	6.33	7.34	6.30
Average Weekly Income	32.90	37.44	43.55	59.92	47.19
Average Weekly Expenditure	29.60	35.60	40.74	49.70	41.82
Average Weekly Saving	3.30	1.84	2.81	10.22	5.37

Source: COS, Malta, (1984) Table 8, p.7

Note: The averages in Table 2 are the simple, unweighted means. The overall mean for Wage Income, given as Lm40.89, with an annual equivalent of Lm2126.3, falls short of the weighted average of Lm2421 given in Table 1.

Although the apparent wage inequalities in the sampled population may not be great, yet this conclusion would not necessarily hold for total income inequalities. Non-wage income appears to be directly related to wage income — the higher the average weekly wage, the higher the additional income. Unfortunately, the COS's report does not tabulate information on households' total income. Such information would have enabled the identification of the non-wage income distribution and its effects on the induced final change in income patterns, by household size and in the aggregate, on the initial wage-income distribution.

The impression of a low degree of inequality which emerges from the COS's data does not hold, a fortiori, for Maltese households. Non-wage income would represent a more prominent share in the income of non-wage employees such as the self-employed and in the income of top managerial personnel; both of these workers' categories were excluded from the survey. The role of capital-yields, and the opportunities for secondary employment become more important when the whole population is examined. Although the COS's results serve as a guide for the degree of wage differences in the sub-groups surveyed, yet an opportunity to assess the total income of the same subgroup has been dissipated; a lapse which, hopefully, would not be repeated when the next Household Budgetary Survey is undertaken.

Distribution of Basic Wages and Net Income: 1980

Results based on the data in Mr Kaim-Caudle's paper appear to support the impressions formed from the Household Budgetary

Survey; the distribution of basic wage rates for employees, a close counterpart to the Gross Wage Income Variable in the COS's report, tends to 'perfect equality'. The data yield a Lorenz-Gini coefficient of 0.086 (Table 3); really, an 'idealised' situation.

Table 3: Lorenz-Gini Coefficients: Employees' Basic Wages and the Net Income of the Self-Employed — 1980

	Lorenz-Gini	Mean Income Lm	Median Income
Employees' Wages and Salaries	0.086	1454	1392
Net Income of Self Employed	0.119	1528	1352

Source: Kaim-Caudle P.R. (1981), Table 4, p.8.

The result gives rise to several observations. The lower value of the Lorenz-Gini compared to those presented in Table 1 reflects the fact that the distribution is worked out in teams of **personal** wage income instead of **households'** wage income as in the COS's report; it corroborates the relationship between the value of the coefficient of concentration and the consuming units explained in Section II. Furthermore, had adjustment been made for life-income profiles, the value of the Lorenz-Gini would have been reduced even more; a perfect 'income equality', adjusted for life-income profiles, would have possibly emerged!

These low values of the coefficients, however, point at an important welfare-efficiency policy dilemma. It has been recently claimed that it is government's policy 'to improve the quality of life...not by making everybody richer but by an even more equitable distribution of what was earned through labour'¹¹. Judging from the result in Table 3, such a policy objective has already been attained! It follows, therefore, that either the policy makers in Malta are not aware of the present wage-distribution state as reflected in official data, or that the data do not reflect correctly the welfare situation as evaluated by policy makers who believe that further wage redistribution is possible. Besides, more thought should be given to a conciliation of the above policy objective with another aim, also officially announced, to 'ensure that differentiation in remuneration in itself acts as an incentive to effort, responsibility and initiative'¹². It is essential to distinguish a mirage from reality, otherwise effective policies cannot be devised and implemented.

The results for the self-employed, a Lorenz-Gini of 0.119, does not reflect the true situation. It has been pointed out in Section 1 that the distribution for the own-account workers was constructed in terms of

the National Insurance Scheme Retirement Pension Options; for various reasons — e.g. self-employed whose income exceeds Lm1600 annually are not entitled to sickness benefits; the option to remain in gainful employment until the age of 65 instead of 61 as in the case of employees; the possibility of adjusting one's payments and, hence, the value of retirement pension, as the planned retirement year approached — the net income classification assessed by Mr Kaim-Caudle does not correspond to the true revenue of the self-employed.

Comments regarding the 'equitability' of the existing wage or net income patterns based on these data are, consequently, of doubtful value. This situation renders the formulation of an incomes policy of any sort hazardous, independent of any long term consequences for economic activity which it may induce. Evidently, research in this area is required; perhaps, the results of the 1985 Census of Population would turn to be a useful starting point.

Distribution of Income among Maltese Aged Sixty and Over: 1981

Income distribution among the Maltese aged sixty and over, analysed from the survey on the Aged carried out in 1982, differs from the 'perfect equality' situation conveyed by the data in Kaim-Caudle's paper. The Lorenz-Gini coefficients, by region, marital status and the educational attainment of the sixty plus, are presented in Table 4.

Analysed on a regional basis, the personal income distribution of the sixty-plus registers the least 'inequality' in the Western Region - a Lorenz-Gini equals to 0.107; the highest 'inequality' is recorded in the Outer Harbour Region — with a coefficient of 0.243. Since 55% of the respondents depended on pensions, primarily social retirement pensions, for their income, it appears that variations in personal income arose mainly from the possession of non-pension income sources, that is, past savings and the ownership of income-yielding immovable property.

Assessing income 'inequality' in terms of the marital status of respondents — a distribution which transforms 'personal' income into 'household' income — it is observed that incomes are more evenly spread among the sixty-plus who are single or widowed — with coefficients of 0.143 and 0.141 respectively — than they are for couples. The coefficients registered under marital classification correspond closely to the values of the Lorenz-Gini submitted in Table 1; though, of course, they refer to a different subgroup, one which was omitted from the COS's survey. The Lorenz-Gini for a two-person household is given at 0.174 in Table 1; for the sixty plus, the comparable coefficient is 0.192. The distributions of income units in these sub-groups of the population are similar, though the absolute income levels differ; the median income for a two-person unit in the COS's survey is Lm2158 against a median income of Lm1195 in the Survey on the Aged.¹³

Table 4: Lorenz-Gini coefficients based on the Personal Income Distribution of the Sixty-Plus in the Maltese Islands — 1981

	Lorenz-Gini	Mean Income Lm	Median Income Lm
<i>i) Region</i>			
Inner Harbour Region	0.215	1217	1074
Outer Harbour Region	0.243	1248	1161
South Eastern Region	0.128	1117	1099
Western Region	0.107	1137	1247
Northern Region	0.161	1130	1124
Gozo	0.197	1048	911
Maltese Islands	0.193	1183	1098
<i>ii) Marital Status</i>			
Single	0.143	983	922
Married	0.192	1337	1195
Widowed	0.141	977	919
<i>iii) Educational Attainment</i>			
Minimal Education	0.130	1035	1025
Primary Education	0.161	1121	1089
Secondary Education	0.256	1484	1215
Tertiary Education	0.289	2090	1699

Source: i) Delia, E.P. (1982), Appendix Table C, p.6
 ii, iii) Centre for Social Research, Social Action Movement, *Project: Survey on the Aged, 1981*, Unpublished data.

Interesting results emerge from the third classification: income levels and income 'inequality' vary directly with the respondents' education. The median income rises from Lm1025 for those with minimal education to Lm1699 for those with tertiary education, while the estimated coefficient of concentration increases from 0.13 for the minimal education group to 0.289 for the tertiary educated. Since the

ownership of property — including house, flat or land — was found to be inversely related to formal educational training of the group,¹⁴ it may be concluded that liquid savings were more popular with respondents in the upper educational levels.

Table 4 suggests that the income distribution functions are positively skewed — the mean higher than the median — except for the distribution in the Western Region. The differences observed between the two parameters are accentuated more than those obtained from the COS's results in Table 1. Such differences could be real, but they could also be partly illusory, the outcome of data presentation. The differences would be real if, in the COS's survey, they reflect the wages distribution in the labour sub-markets following a decade of flat-rate wages increases which narrowed wages differentials. They could be illusory, however, if the degree of skewness reflect the limitation imposed on the results by the 4-income classification presented in the COS's report. Wage differences are minimised when income-groups are agglomerated within a wider wage range; a normally distributed wage income within the group, around the mid-point of the group's wage class, would be implied. In the survey on the aged, information on income is spread over nine categories which enabled the derivation of percentile values from plotted cubic functions instead of interpolated through the issue of standard formulae which imply symmetric intra-class distribution.¹⁵

Given this possibility, an alternative measurement of income distribution for the sixty plus is presented in Table 5. It expresses the distribution in terms of a series of coefficients made up of selected percentile values and the median. Unlike a summary statistic, like the Lorenz-Gini, a series conveys more information on the income spread. The series of coefficients in Table 5 corroborate the conclusions based on Table 4; they suggest that the smallest range of income spread occurs for respondents living in the Western Region, for persons single or widowed, and for those with minimal education.

Welfare Policy Implications

Several important considerations for welfare policy emerge from the preceding discussion. These relate to households' general welfare level to the extent that this is directly correlated to households' incomes.

The data in Table 2 identify the dependance of low income families on secondary income sources to meet their weekly expenditure. At a time when it is proving difficult to generate new employment opportunities in Malta, and economic planners are preoccupied to induce competitive cost positions for local manufacturing and service units, the level of wages could be maintained relatively low in relation to the basic needs of a 'representative' Maltese household. It becomes necessary, for social policy formulation, to establish 'Poverty levels'.¹⁶

Table 5: Distribution of Personal Income of Maltese Aged Sixty and Over — 1981

	P_{10}/P_{50}	P_{25}/P_{50}	P_{75}/P_{50}	P_{90}/P_{50}
<i>i) Region</i>				
Inner Harbour Region	0.75	0.81	1.20	1.75
Outer Harbour Region	0.67	0.78	1.13	1.52
South Eastern Region	0.72	0.82	1.18	1.20
Western Region	0.70	0.81	1.02	1.11
Northern Region	0.75	0.80	1.18	1.36
Gozo	0.86	1.00	1.35	1.63
Maltese Islands	0.70	0.76	1.18	1.32
<i>ii) Marital Status</i>				
Single	0.88	0.88	1.14	1.38
Married	0.72	0.91	1.07	1.42
Widowed	0.82	0.88	1.15	1.41
<i>iii) Educational Attainment</i>				
Minimal Primary	0.77	0.87	1.12	1.27
Primary Education	0.71	0.82	1.14	1.25
Secondary Education	0.67	0.72	1.28	1.91
Tertiary Education	0.56	0.80	1.42	2.34

Source: Delia, E.P. (1982), p.30.

Poverty is primarily subjective; a man is poor if he considers himself to be poor. In this sense, therefore, poverty is ineradicable. To this writer's knowledge, research on this subjective valuation of poverty in Malta has never been undertaken. But this issue was probed in the survey on the aged. 77% of respondents considered that their income satisfied their needs; however, 19% found it inadequate and they depended upon supplementary assistance in cash or kind from their relatives and friends.¹⁷

An 'objective' evaluation of poverty level could be applied to the data at hand, estimating a poverty line at one-half the median income. If this criterion is used to estimate a poverty line for a five-person family in Malta — the 'standard', representative family unit usually referred to in the budget speech by the Maltese Ministers of Finance — the poverty income line for 1981 would be Lm23.9 per week, being half the median income of the five person household as estimated from the COS's Budgetary Survey. Poverty lines for other household units based on Table 1 give Lm20.75, Lm22.25, Lm23.25 and Lm24.15 for the two-, three-, four- and six-person household units respectively. Had the poverty level been estimated on total gross income distribution, instead of wage income, the values of the relative poverty limits would have been higher.

These results give rise to an important observation: at Lm22.8, the National Minimum Wage fell **below** the 'poverty limit' for the four-, five-, and six-person family units in 1980. The minimum wage practically correspond to the poverty line for the family with one child; it exceeded, by 10%, the poverty income level for a married couple with no children. It follows, that families whose heads depended exclusively on the minimum wage-income would find themselves in financial difficulties.¹⁸ Indeed, government economic planners estimate that between 1500 and 2000 households would need state assistance in housing allocation, as their income would not permit them to provide themselves with adequate housing facilities.¹⁹ On the assumption that there are 100,000 households in Malta and Gozo, between 1.5% and 2.0% of households could be classified as 'poor'; these data surely do not account for household units whose heads are over sixty.²⁰ The problem of families living close to poverty or subsistence level in Malta may not have been solved after all! This social issue demands a thorough investigation.

In sum, by utilising statistical information on wage or income distributions published recently in three reports — a Household Budgetary Survey, an Evaluation of Social Policy in Malta, and a Study on the Aged — we may conclude that these distributions do not suggest wide wage or income inequalities within the sub-groups of population analysed.

The results on gross wage income distribution were interpreted to record the policy of granting flat wage increases over the seventies — a policy which was being reconsidered in the early eighties in order to give way to a more flexible wage policy, but which was eventually overtaken by a wage freeze introduced in 1983 — although the manner in which data are classified could have partly contributed to the obtained results.

In the survey on the sixty-plus, it is concluded that the lowest income inequalities are registered in the Western Region; for those households whose heads are widowed or live alone; and for those respondents with minimal education. It appears that income levels and income 'inequality' are directly related to the educational attainment of the present sixty-plus sub-group.

Wage income falls short of expenditure for all household units included in the COS's survey whose gross wage income was less than Lm50 weekly. On investigating the establishment of a Poverty Income limit — always granting that Poverty is intrinsically a subjective matter — it emerges that a Poverty Line, defined as one-half the median income value of a 'representative' five-person household, exceeded the national minimum wage in 1980. This observation, associated with an inference on the incidence of poverty among the sixty-plus, leads to a conclusion that a number of Maltese households — tentatively set at a minimum of 5% — could be living either in poverty or close to subsistence level. Evidently, this issue demands a thorough investigation; the data on wage or income patterns which may be published in the results of the COS's Census of Population carried out in 1985 may be a valid start, provided that the data could be usefully organised to derive the desired parameters.

E.P. Delia is Lecturer in Economics, The University of Malta.

NOTES:

1. Stewart and Streeten (1971), p.5.
2. Refer, for example, to address by the Minister of Labour and Social Welfare at the ILO conference in Geneva in June 1986. See *The Times*, Malta, June 18, 1986, p.24.
3. An evaluation of Wages' distributions based on the 1957 and 1967 Population Censuses is given in Delia (1976).
4. Central Office of Statistics, Malta, (1984).
5. Kaim-Caudle (1981).
6. Delia (1982).
7. Central Office of Statistics, Malta, (1984), p.6., Table 5.
8. Delia (1982), p.24.
9. A similar problem arises with the interpretation of coefficients of an aggregate income tax function for the Maltese Islands. See Delia (1978).
10. Economic Division, Office of the Prime Minister, *Guidelines for Progress: Economic Plan 1981-85*, (1981), p.50. This document considers the re-introduction of differential awards for 'special skills, responsibilities, initiative and effort' (p.82), considerations which were not implemented., Instead a wage/salary freeze was introduced in 1983.
11. Address by the Minister of Labour and Social Welfare at the ILO Conference, June 1986.
12. *Guidelines for Progress*, p.82.
13. One fifth of respondents had dependents. Delia (1982), p.31.
14. Delia (1982), p.26.

$$15. \text{ Median} = L_c + \left(\frac{N/2 - (\sum f)_i}{f_{\text{median}}} \right) c$$

where

L_c = lower class boundary of the Median Class

N = Total frequency

$(\sum f)_i$ = Sum of frequencies of all classes lower than the median class.

f_{median} = frequency of median class.

c = size of median class interval.

16. A useful synthesis of poverty line definitions is found in Hagenaars and van Praag (1985).
17. Delia (1982), p. 31. In the interviewers' opinion 2% of the respondents were considered very poor; 45% gave an impression of 'modest means'; 42% appeared to be of 'adequate means' and 10% seemed to be well-off.
18. The changes in money and real disposable income — post tax, post transfer payments — between 1977 and 1980 are recorded for the five-person household in Delia (1983), pp.50-52.
19. Economic Division, Ministry of Trade and Economic Planning, *Development Plan For Malta 1986-1988*, p.66.
20. Note (17) above.

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