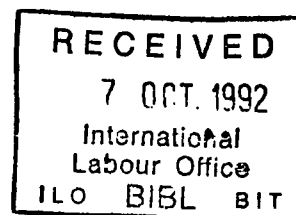**WORLD EMPLOYMENT PROGRAMME RESEARCH**

<u>**Working Paper**</u>

<u>**LABOUR MARKET ANALYSIS AND EMPLOYMENT PLANNING**</u>

Working Paper No. 60

<u>CUMULATIVE DISADVANTAGE?</u>
<u>WOMEN INDUSTRIAL WORKERS IN MALAYSIA AND THE PHILIPPINES</u>

by

Guy Standing

<u>Note</u>: WEP Research Working Papers are preliminary documents
circulated to stimulate discussion and critical comment.

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Preface

Some working papers deserve that name more than others. The following fits in the more deserving category, and quite deliberately provides many more tables and statistics than would be desirable in a final paper. The main reason is that it is intended to make this and related papers from the ILO's ongoing labour flexibility surveys useful for other researchers. Thus, labour economists and others concerned with analysing the forms and causes of women's labour market disadvantages may find some of the tables and results useful for their own work, whereas the general reader might find the detail rather pedantic and only be interested in the essential story. A final, shorter paper will try to have more flesh and fewer visible bones.

The subject matter is what one would expect to have been very well covered analytical and empirical territory, albeit applied to two countries on which there has been relatively little research. However, it is perhaps evidence of the potential of the ILO's enterprise-level labour flexibility surveys that there seems to be a dearth of demand-side empirical work on sexual segregation in the labour market, particularly in developing countries. Most of the vast amount of applied research has drawn on labour force or household surveys. Perhaps there is a rich research tradition that has not been identified, in which case I apologise and hope that some attentive reader will bring it to our attention.

The broad issues behind this paper are twofold:

(1) Can we identify distinctive forms of discrimination at the factory or enterprise level?

(2) Can we identify the cumulative process of labour market disadvantage, or possibly the countervailing tendencies whereby discrimination on one element of labour force involvement is offset either by non-discrimination or by an alternative form of discrimination on another element?

A longer-term objective must be to use labour market data to analyse the patterning of discrimination, segregation and labour market disadvantage in a recursive system, so as to help policy makers select the crucial points of intervention if they wish to have some success in reducing them. In that regard, the following is merely an attempt to clarify a few of the key blocks.

Thanks, with the usual caveat about responsibility, are due for comments or assistance to, first, Jim Windell, and also to Loretta de Luca, Barbara Mundy, Richard Anker and Eivind Hoffmann.

Guy Standing

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Cumulative Disadvantage? Women Industrial Workers
in Malaysia and the Philippines

Introduction

In every society some pattern of labour force stratification
occurs, usually with certain demographic, ethnic or religious
groups being relegated to low-paid, low-status jobs with little
prospect for upward socio-economic mobility. Stratification is
contrary to principles of equity and has adverse efficiency
consequences. So, reducing its prevalence is always desirable.
The problem is that to formulate the most appropriate policies to
combat it we need to know not only the nature of the segregation
and stratification, as well as their socio-cultural roots, but the
causes of the stratification <u>within</u> the labour market. In
particular, it is important to know where the main points of
discrimination occur - recruitment, job allocation, training,
initial wages, other forms of payment and benefit entitlement,
employment security and so on.

Women workers are usually presumed to face discriminatory
barriers at all stages. Whether or not that is true is an
empirical matter, and in any case it is most likely that in
different countries, sectors and types of organisation the
relative importance of specific factors will vary. This paper
compares the situation of women workers in industrial employment in
Malaysia and the Philippines, and is based on two almost identical
surveys carried out in 1988 and 1990 respectively, methodological
details of which are summarised in the Appendix. These were the
Malaysian Labour Flexibility Survey (MLFS) and the Philippines
Labour Flexibility Survey (PLFS), the former covering 3,100
manufacturing establishments, the latter 1,311 industrial firms,
most of which were in manufacturing.[1]

Both countries had experienced some form of "structural
adjustment" programme in the 1980s, in which there had been
concerted attempts to shift towards more export-oriented
industrialisation. Both had also experienced periods of recession
just prior to the respective surveys, and their governments were
intent on making the labour market more flexible through reform of
regulations and/or tightening controls over union activities. Both
have been strongly influenced by multinational investment.

There are also major differences that should be borne in
mind. In Malaysia, economic growth over the decade of the 1980s
was spectacularly better. However, there was a sharp recession in
1985-86, which prompted some rethinking about development strategy
and, inter alia, stimulated public debates about the role of women
workers. The earlier phases of export-led industrialisation had
been based on the massive employment of young women, hired from the
countryside as cheap labour for two or three years and then
replaced from similar sources. For well over a decade, the image
of women industrial workers had been the familiar one of "nimble
fingers", "docility" and "beaverish productivity", with an eventual

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[1] One difference was that the PLFS covered construction and
trade as well as manufacturing, though most establishments were in
manufacturing.

return to the kampong as mothers and wives.[2] Although that was always an oversimplification, the basic question in 1985-86 and thereafter was whether or not women would be treated as a labour "reserve", to be laid off in large numbers. Coupled with that was the question whether women would be displaced in the anticipated, and occurring, labour-displacing phases of industrialisation, eased out of manual jobs as automation and capital-labour substitution occurred.[3] Against that, one might hypothesise that after more than a decade of export-led industrialisation women might have been absorbed into the industrial workforce to the point where many barriers to their continued employment would have crumbled. In effect, young women workers in the urban-industrial areas could have severed their links with their rural kampongs and have learned the basic "skill" of being industrial wage labour. So, the overriding question is: Are women a labour reserve or is "feminisation" of employment continuing?

A related hypothesis is that the increasing globalisation of production and the pursuit of flexible forms of labour to retain or increase competitiveness, as well as changing job structures in industrial enterprises, favours the feminisation of employment, such that women are gaining an increasing share of many levels of job.[4]

In the Philippines, in some respects one might argue that women have had a higher social status, epitomised by the fact that in the late 1980s a woman was President of the country, and perhaps marginally aided by the country being predominantly Catholic whereas Malaysia is predominantly muslim. That leads to contentious speculations that lie outside the remit of this paper. What is clear is that in the Philippines, the Labour Code gave more protection to women. Under article 130, nightwork is prohibited for women, regardless of age, and under section 1 of the Republic Act 6725 (approved on May 12, 1989), amending article 135 of the Labour Code, "it shall be unlawful for any employer to discriminate against any woman employee with respect to terms and

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[2] Numerous studies have highlighted the characteristics of factory girls in the mid-1970s and early 1980s. See, for instance, F. Daud, Minah Karan: The truth about Malaysian factory girls (Kuala Lumpur, Berita Publishing Co., 1985); B.K. Tan, "Women workers in the electronics industry", in A.Y. Hing and R. Talikb (eds.), Women and employment in Malaysia (Kuala Lumpur, Department of Anthropology and Sociology, University of Malaysia, 1986), pp. 17-32; K. Salih, M.L. Young, L.H. Chan, K.W. Loh and C.K. Chan, Young workers and urban services: A case study of Penang, Malaysia: Final Report (Penang, University Sains Malaysia, Participatory Urban Services Project, 1985).

[3] This is a popular international hypothesis. See, e.g., S. Joekes, "Gender and macroeconomic policy", AWID Occasional Paper, No. 4 (Washington, DC, Sept. 1989), p.19. See also, D. Elson and R. Pearson (eds.), Women's Employment and Multinationals in Europe (Basingstoke, Macmillan, 1989).

[4] G. Standing, "Global feminisation through flexible labour", World development, Vol. 17, No. 7, July 1989, pp.1077-95.

conditions of employment solely on account of her sex". The Code defines as an act of discrimination:

(a) payment of a lower wage, salary or other form of remuneration and fringe benefit, for work of equal value;

(b) favouring a male employee over a female with respect to promotion, training opportunities, study and scholarship grants solely on account of their sexes.

That is the context of this paper, which considers various ways by which discriminatory barriers intensify sexual stratification and segregation and how the relative significance of such barriers differs in the two countries - Malaysia, with a rapidly industrialising economy in which ethnic pluralism has been the outstanding characteristic, and the Philippines, where industrial growth has been much less successful and where a "structural adjustment programme" has been pursued far more assiduously for most of the past decade.

2.   Segregation by entry: Discriminatory recruitment

It is often assumed that the main form of discrimination by which labour segregation occurs is through the hiring process. This covers two aspects - whether a particular type of person is recruited at all and whether certain groups are recruited for particular types of job. A problem of interpretation arises in that women might not apply for jobs, either in general or for specific types of job, whether because they believe they will not obtain any employment or the type of job in question or because they do not wish to do so. We will not deal with that set of issues, important though they are in the discrimination story.

In a sense, we control for that factor in that in the two surveys on which this analysis is based the section on the pattern of hiring began by asking separate sets of questions on employers' recruitment preferences for clerical and production workers separately, and for the Philippines for professional and technical workers as well.

Discrimination is a notoriously complex process. An employer may discriminate against a woman or an ethnic or minority group or an age category directly by simply stating a preference, or the employer may discriminate indirectly, by giving characteristics desired in workers that a certain group does not possess or possesses to a lesser extent, even though those characteristics are not essential for the employment or set of tasks in question.[5] This indirect form of discrimination is hard to identify but should

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[5]   This brings to mind an experience in the pilot of the Malaysian Labour Flexibility Survey. A Chinese owner of a furniture-making factory, when asked if he had a preference for any ethnic group when he was recruiting, said, "No, no, I have no preference. I don't discriminate - just as long as they speak Mandarin."

be borne in mind in interpreting employer attitudes and revealed behaviour.

All employers - personnel directors in large-scale firms, owner-managers in small-scale - were asked identical questions about worker characteristics that might have been used as screening devices in the recruitment process, and before we turn to the perceived significance of gender we will note the pattern displayed on other factors. The first aspect examined in the two countries was the age at which firms preferred to hire workers. Employers might state that they prefer to recruit at a certain age because that is perceived as indicative of expected short-run or long-run productivity; others might have such a preference from a mix of cultural norms and prejudice. It is safest to be eclectic on such matters, since a combination of motives is probably usually involved.

In response to the age preference question, as far as clerical workers were concerned, some firms gave specific ages, others gave a wider range. As far as possible, respondents were encouraged to give a specific age or narrow age range.

In both Malaysia and the Philippines most employers preferred to recruit clerical workers aged between 21 and 25, but in Malaysia many more have preferred to recruit teenagers (Table 1). In the Philippines many more employers said they had no age preference. For production workers, the electronics industry in Malaysia was conspicuous for preferring to hire very young workers, as has been its pattern since its early days in the 1970s. In the Philippines that was less pervasive, as Table 2 shows. In general, in both Malaysia and the Philippines large firms preferred to recruit at a younger age(Table 3), implying that most smaller firms did not practice "ageism". This may seem a trivial point, but if large "formal" (sic) enterprises prefer to recruit very young workers, whereas small-scale "informal" enterprises are less inclined to do so, it would be irrational and even impractical for young workers to enter the latter, while "waiting" for opportunities in the "formal" firms, a pattern commonly presumed to apply to urban industrialising labour markets.[6]

The firms were also asked about their schooling preferences. Most recruited clerical workers on the basis of level of schooling, but as expected, that was less important in the case of production workers (Tables 4 and 5). Small firms put much less emphasis on "credentialism" than did large establishments, both for clerical and production workers (Table 6). That, of course, does not imply that the schooling was any more necessary for the work in large firms.

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[6] The queuing hypothesis is associated with variants of the Todaro model of labour migration and with the widespread belief that urban unemployment can be explained by reference to workers preferring to wait for "formal sector" jobs rather than enter small "informal" units. See, e.g., L.A. Riveros, Equity impact and effectiveness of adjustment policies with segmented labour markets: The case of the Philippines (Washington, DC, The World Bank, 1989, mimeo.).

Employers were also asked to identify the <u>most important factor</u> when recruiting. For clerical workers, while most firms expressed a preference for some particular age and schooling level, in all sectors except electronics a majority said that the most important factor was previous work experience (Table 7). This was also the factor most often cited in the case of production workers (Table 8), in all industries except electronics, in which formal schooling was regarded as the most important, followed by personal characteristics and contacts with existing workers, classified as "other" in the tables.

For both clerical and production workers, small firms were more likely to regard past work experience as the most important factor, whereas large firms gave a heavier weight to formal schooling. This further suggests that small units were not necessarily an easy entry point for workers. For production workers, large firms were more likely to state that the sex of the applicant was of primary importance (Table 9). They were also more inclined to cite the primary importance of age and schooling, whereas small firms overwhelmingly gave past work experience. Remarkably few firms - less than one in ten - cited "past training" as the most important, suggesting that for most clerical and production jobs the necessary training could be conveyed to new workers fairly easily and with little cost.

So, what about overt sex "discrimination"? Consider first the recruitment of <u>clerical workers</u>. Whereas a majority of Malaysian firms stated that they preferred to recruit women for clerical jobs, in the Philippines such overt sex discrimination was less strong, a majority saying that they were equally willing to hire either men or women (Tables 10 and 11). Indeed, in both Malaysia and the Philippines <u>preference discrimination in favour of women was greatest in small firms</u>.

Table 1: Employers' age preference for recruitment of clerical workers, by Industry, Malaysia, 1988 and the Philippines, 1990.
(per cent distribution of establishments in each industry)

MALAYSIA

Industry	Age preferred					Any age under 45	No age pref.
	16-20	21-25	16-25	26-35	36-45		
Food, etc	3.6	52.7	15.6	9.7	0.2	11.1	7.1
Textiles, etc.	4.8	55.9	22.3	5.2	-	7.4	4.4
Wood products	4.1	50.6	22.1	8.8	0.3	8.5	5.6
Paper products	3.0	57.6	18.2	7.3	0.6	6.7	6.7
Chemicals, etc.	2.5	60.7	15.6	7.0	0.2	8.3	5.5
Non-metal. min.	3.2	51.6	21.0	11.5	0.6	7.0	5.1
Basic metals	4.0	50.0	14.9	14.9	1.3	8.1	6.8
Fabricated metal	3.9	60.2	16.8	6.2	0.2	8.0	4.7
Electronics	-	44.8	41.4	6.9	-	5.2	1.7
Other manufactur.	8.7	52.2	19.6	6.5	-	4.3	8.7
Construction	-	-	-	-	-	-	-
Trade	-	-	-	-	-	-	-
Total	3.6	55.4	18.5	8.0	0.3	8.4	5.7

PHILIPPINES

Industry	Age preferred					Any age under 45	No age pref.
	16-20	21-15	16-25	26-35	36-45		
Food, etc	-	49.4	13.0	13.0	-	5.2	19.5
Textiles, etc.	-	56.2	19.8	9.1	-	3.3	11.6
Wood products	2.0	52.0	6.0	10.0	2.0	4.0	24.0
Paper products	-	51.5	9.1	18.2	-	3.0	18.2
Chemicals, etc.	-	56.4	6.4	14.9	1.1	2.1	19.1
Non-metal. min.	-	47.8	30.4	17.4	-	-	4.3
Basic metals	-	47.2	13.9	16.7	2.8	-	19.4
Fabricated metal	-	59.7	6.9	9.7	-	5.6	18.1
Electronics	5.4	51.4	10.8	18.9	-	2.7	10.8
Other manufactur.	-	60.0	7.5	25.0	-	-	7.5
Construction	1.3	43.0	7.6	16.5	-	2.5	29.1
Trade	-	50.0	7.7	22.5	1.4	1.4	16.9
Total	.5	52.3	10.8	15.7	.6	2.7	17.4

Table 2: Employers' age preference for recruitment of production workers, by Industry, Malaysia, 1988 and the Philippines, 1990.
(per cent distribution of establishments)

Industry	MALAYSIA							PHILIPPINES						
	Age preferred					Any age under 45	No age pref.	Age preferred					Any age under 45	No age pref.
	16-20	21-25	16-25	26-35	36+			16-20	21-25	16-25	26-35	36+		
Food, etc	8.6	29.0	20.5	12.2	1.5	17.9	10.2	2.6	28.6	29.9	10.4	2.6	6.5	19.5
Textiles, etc.	16.4	22.7	34.9	6.3	0.4	10.9	8.4	2.5	35.8	35.0	6.7	-	6.7	13.3
Wood products	4.3	25.8	15.1	15.6	3.5	23.8	11.9	4.2	27.1	8.3	10.4	-	12.5	37.5
Paper products	13.0	34.6	27.8	10.5	0.6	9.9	3.7	-	50.0	14.1	15.6	-	1.6	18.8
Chemicals, etc.	10.5	33.8	24.5	8.1	0.2	15.4	7.3	2.2	33.3	25.6	11.1	1.1	2.2	24.4
Non-metal. min.	3.1	33.1	18.7	14.4	0.6	21.2	8.7	4.3	39.1	14.1	17.4	-	-	17.4
Basic metals	5.2	33.8	20.8	15.6	-	15.6	9.1	-	37.1	22.9	14.3	2.9	-	22.9
Fabricated metal	8.0	35.0	22.6	10.8	1.2	14.4	8.0	4.3	38.6	20.0	10.0	4.3	8.6	17.1
Electronics	22.4	15.5	51.7	-	-	5.2	5.2	5.6	27.8	41.7	5.6	1.4	5.6	11.1
Other manufactur.	26.0	26.0	30.0	2.0	-	8.0	8.0	2.6	39.5	23.7	18.4	-	-	15.8
Construction	-	-	-	-	-	-	-	2.6	24.7	13.0	22.1	3.9	2.6	31.2
Trade	-	-	-	-	-	-	-	4.0	38.9	19.0	13.5	1.6	3.2	19.8
Total	9.4	30.3	23.4	10.9	1.2	16.1	8.6	2.9	35.1	22.8	12.4	1.4	3.9	23.6

Table 3. Employers' age preference for recruiting clerical and production workers, by employment size of establishment.
Malaysia 1988 and Philippines, 1990.
(per cent distribution for each size category)

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MALAYSIA

Age preference	Employment size						
	1-4	5-20	21-50	51-100	101-500	501-1,000	1,001+
Clerical workers							
16-20	-	3.3	3.3	3.9	3.9	3.4	4.7
21-25	46.7	54.9	56.7	54.0	56.8	57.9	53.1
16-25	26.7	16.0	16.0	19.3	19.2	26.1	35.9
26-35	6.7	9.0	8.1	8.3	8.2	4.5	3.1
36-45	-	1.0	0.2	-	0.3	-	-
Under 45	20.0	9.0	9.4	7.9	8.3	6.8	1.
No age preference	-	9.5	6.3	6.6	3.3	1.1	1.6
Production workers							
16-20	12.9	7.8	7.2	8.3	10.6	22.7	18.7
21-25	29.0	29.3	31.0	30.7	31.6	27.3	18.7
16-25	12.9	17.2	20.4	22.2	27.4	36.4	54.7
26-35	6.5	13.4	12.9	10.7	9.0	2.3	3.1
36-45	3.2	2.1	1.5	0.9	0.7	-	-
46+	-	-	0.5	-	-	-	-
Under 45	19.4	18.9	17.5	16.9	14.5	9.1	3.1
No age preference	16.1	11.3	9.1	10.2	6.3	2.3	1.6

PHILIPPINES

Age preference	Employment Size						
	1-20	21-50	51-100	101-250	251-500	501-1000	1001+
Clerical workers							
16-20	-	-	.7	.9	-	1.7	-
21-25	53.6	44.1	50.7	53.4	58.9	63.3	51.1
16-25	8.7	10.2	14.3	9.5	6.3	10.1	23.4
26-35	11.6	16.9	16.4	16.8	18.8	10.0	8.5
36-45	1.4	-	-	.9	-	-	-
Under 45	-	2.3	2.9	4.3	1.8	3.3	2.1
No age preference	23.3	26.6	15.0	13.8	14.3	11.7	14.9
Production workers							
16-20	3.0	3.6	1.5	1.8	1.8	4.9	8.7
21-25	27.3	33.9	38.6	31.7	40.9	42.6	32.6
16-25	13.6	14.9	23.5	26.7	27.3	26.2	28.3
26-35	18.2	13.7	9.8	28.0	9.1	13.1	13.0
36-45	3.0	1.2	.8	.9	-	-	2.2
46+	1.5	-	.8	-	.9	-	-
Under 45	4.5	3.0	6.8	6.3	4.5	-	6.5
No age preference	28.2	29.8	18.2	19.9	15.5	13.1	8.7

Note: "Under 45" means any age under 45.

Table 4.   Employers' schooling level preference for clerical workers, by Industry, Malaysia 1988 and Philippines 1990

(% distribution of establishments for each job category)

Industry	MALAYSIA				PHILIPPINES					
	Lower Sec.	Upper Sec	Any	Other	Elem.	Sec.	Vocat	Coll.	Any	Other
Food, etc.	4.2	89.1	4.8	1.2	-	3.6	.9	93.7	1.8	-
Textiles, etc.	3.9	92.1	0.9	3.1	-	2.7	2.0	91.9	2.0	1.3
Wood products	5.0	90.9	2.9	1.2	-	2.4	2.4	90.2	4.9	-
Paper products	3.0	92.7	2.4	1.8	-	1.0	3.1	92.7	1.0	2.1
Chemicals, etc.	2.5	94.5	1.8	1.0	-	2.6	2.6	91.5	2.6	.9
Non-metal. min.	1.3	91.7	3.8	1.9	-	2.6	7.7	84.6	5.1	-
Basic metals	5.4	87.8	2.7	2.7	-	7.3	-	89.1	3.6	-
Fab.metal	1.4	93.4	2.5	2.7	1.0	2.0	3.0	93.1	2.0	-
Electronics	3.4	87.9	-	8.6	-	4.8	-	95.2	-	-
Other manuf.	2.2	93.5	4.3	-	-	-	-	98.3	1.7	-
Construction	n/a	n/a	n/a	n/a	-	2.3	4.6	89.7	2.3	1.1
Trade	n/a	n/a	n/a	n/a	-.	2.3	1.4	93.5	2.9	-
Total	3.5	91.8	2.8	1.9	-.1	2.6	2.2	92.3	2.4	.5

Table 5. Employers' schooling level preference for production workers, by Industry, Malaysia 1988 and Philippines 1990
(% distribution of establishments for each job category)

Industry	MALAYSIA					PHILIPPINES					
	Complete Primary	Lower Sec.	Upper Sec	Any	Other	Elem.	Sec.	Vocat.	College	Any	Other
Food	24.7	20.9	5.9	43.6	5.0	2.9	58.8	5.1	5.9	25.8	1.5
Textiles	32.3	24.8	3.4	34.4	5.0	4.4	62.1	8.2	.5	23.6	1.1
Wood products	19.9	14.2	2.6	57.8	5.5	4.0	45.5	5.0	1.0	44.5	-
Paper products	18.4	38.0	12.9	25.1	4.9	1.0	56.4	12.9	5.9	23.8	-
Chemicals, etc.	20.6	30.0	10.1	36.4	4.7	1.6	67.2	6.6	4.9	19.7	-
Non-metal. min.	20.6	15.0	8.7	50.0	5.6	4.0	54.0	8.0	-	34.0	-
Basic metals	20.8	24.7	13.0	36.4	5.2	1.6	46.9	14.1	1.6	36.0	-
Fab. metal	16.0	34.5	9.0	36.3	4.2	3.8	49.5	21.0	1.9	23.8	-
Electronics	10.3	51.7	34.5	3.4	-	-	66.7	-7.1	14.3	11.9	-
Other manuf.	28.0	30.0	4.0	30.0	8.0	3.0	48.5	9.1	4.5	34.9	-
Construction	n/a	n/a	n/a	n/a	n/a	1.2	32.9	12.9	3.5	49.4	-
Trade	n/a	n/a	n/a	n/a	n/a	1.6	47.4	7.9	26.3	14.8	2.1
Total	21.4	26.1	7.9	39.7	4.8	2.6	53.5	9.5	7.0	26.9	.6

Table 6. Employers' school level preference for clerical and production workers, by employment size of establishment, Malaysia 1988 and Philippines, 1990

(per cent distribution for each size category)

MALAYSIA

Employment size	Complete Primary	Lower Sec.	Schooling Upper Sec.	Any	Other
Clerical workers					
1-4	n/a	13.3	73.3	13.3	-
5-20	n/a	6.5	86.2	8.5	1.2
21-50	n/a	3.3	90.7	3.8	2.1
51-100	n/a	4.1	92.6	1.3	2.0
101-500	n/a	1.9	96.0	0.3	1.8
501-1000	n/a	1.1	95.4	-	3.4
1001+	n/a	1.6	95.3	-	3.1
Production workers					
1-4	19.4	16.1	6.5	45.2	12.9
5-20	21.4	15.3	3.6	52.2	7.5
21-50	22.4	21.6	4.7	46.3	4.9
51-100	22.8	25.6	6.9	40.8	3.9
101-500	19.7	33.7	12.2	30.1	4.3
501-1000	23.9	15.4	18.2	11.4	1.1
10001+	17.2	53.1	21.9	7.8	-

PHILIPPINES

Employment size	No Schooling	Elem.	Schooling Second.	Vocat.	College	Any	Other
Clerical workers							
1-20	1.3	-	5.3	4.6	82.2	5.9	-.7
21-50	.3	.3	2.7	2.0	92.7	2.0	-
51-100	-	-	1.1	2.7	93.1	1.6	1.6
101-250	-	-	3.0	1.1	93.6	1.9	-.4
251-500	-	-	.8	1.6	96.9	.8	-
501-1000	-	-	2.0	-	95.9	-	2.0
1001+	-	-	2.0	-	95.9	-	2.0
Production workers							
1-20	10.1	4.3	42.2	8.9	7.4	26.0	1.2
21-50	2.3	2.9	52.3	9.2	7.5	25.5	-.3
51-100	2.8	2.2	52.2	11.8	6.7	23.6	-.6
101-250	2.3	1.2	54.2	10.4	8.1	23.5	-.4
251-500	1.6	3.2	60.8	8.0	8.0	16.8	1.6
501-1000	1.5	-	70.6	10.3	1.5	16.2	-
1001+	-	2.0	77.6	4.1	2.0	14.3	-

Table 7. Most important factor in recruiting clerical workers by industry, Malaysia 1988 and Philippines 1990.
(% distribution for each industry group)

Industry	MALAYSIA						PHILIPPINES					
	Gender	Age	Schooling	Exper-ience	Trained	Other	Gender	Age	Schooling	Exper-ience	Training	Other
Food, etc.	3.8	0.6	20.8	61.3	4.2	9.4	1.8	-	14.5	71.8	6.4	5.4
Textiles, etc.	3.5	0.4	15.7	73.8	3.5	3.1	1.3	-	22.0	64.7	8.0	3.4
Wood products	4.7	1.2	13.8	73.0	2.0	5.3	-	-	17.7	67.1	8.9	6.3
Paper products	2.4	1.2	17.0	69.7	1.2	8.5	-	-	17.9	74.7	5.3	2.2
Chemicals, etc.	3.0	1.3	16.2	67.7	2.3	9.6	-	-	19.3	66.7	7.0	7.1
Non-metal. min.	3.2	1.3	13.4	73.2	0.6	8.3	-	-	15.8	73.7	2.6	7.8
Basic metals	1.3	1.3	16.2	78.4	-	2.7	-	-	23.6	65.5	7.3	7.1
Fab.metal	2.5	1.0	11.1	77.2	1.8	6.4	1.0	-	34.0	58.0	5.0	2.0
Electronics	1.7	-	24.1	48.3	3.4	22.4	2.4	-	24.4	61.0	9.8	2.4
Other manuf.	4.3	6.5	8.7	71.7	2.2	6.5	-	1.6	19.7	68.9	8.2	1.6
Construction	n/a	n/a	n/a	n/a	n/a	n/a	-	-	22.6	64.3	9.5	3.6
Trade	n/a	n/a	n/a	n/a	n/a	n/a	-	.5	20.7	64.4	7.7	6.8
Total	3.3	1.1	15.6	70.0	2.4	7.6	.5	.2	21.1	63.3	7.2	4.8

Table 8. Most important factor in recruiting production workers, by industry, Malaysia 1988 and Philippines 1990
(% distribution for each industry group)

Industry	MALAYSIA							PHILIPPINES					
	Gender	Age	Schooling	Experience	Trained	Other	None	Gender	Age	Schooling	Experience	Trained	Other
Food	9.3	7.4	5.7	40.1	8.4	25.2	3.9	.8	2.3	6.0	69.9	8.3	11.9
Textiles	13.3	5.0	5.4	51.4	10.8	12.4	1.7	.5	–	5.4	79.3	7.1	7.6
Wood products	6.6	3.8	1.6	59.6	6.6	16.5	5.2	–	–	1.0	77.2	10.9	11.0
Paper products	5.9	4.1	7.1	51.5	11.8	15.4	4.1	1.0	–	2.0	80.2	10.9	6.7
Chemicals, etc.	7.5	7.5	7.7	36.8	10.4	27.6	2.4	3.3	–	11.6	66.1	9.1	13.2
Non-metal. min.	11.3	4.2	3.0	43.4	10.7	22.6	4.8	–	–	2.0	77.6	10.2	6.1
Basic metals	7.6	7.6	6.3	45.6	11.4	19.0	2.5	1.5	–	4.6	72.3	9.2	13.4
Fab. metal	7.5	5.7	6.9	54.6	8.7	14.0	2.6	.9	1.9	5.7	74.5	12.3	8.5
Electronics	15.5	17.2	25.9	15.5	1.7	24.1	–	2.4	2.4	9.5	61.9	11.9	–
Other manuf.	5.9	15.7	5.9	41.2	11.8	17.6	2.0	3.2	–	4.8	66.7	15.9	12.4
Construction	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.2	–	–	72.8	13.6	12.6
Trade	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.2	1.1	6.6	62.8	9.8	14.6
Total	21.4	26.1	7.9	39.7	4.8		3.3	1.4	.7	5.2	71.9	10.2	10.7

Table 9. Most important factor in recruiting clerical and production workers, by employment size of establishment.
Malaysia 1988 and Philippines, 1990
(per cent distribution for each size category)

MALAYSIA

Factor	1-4	5-20	21-50	51-100	101-500	500-1,000	1000+
Clerical workers							
Gender	-	5.0	4.2	2.6	2.2	1-1	4.7
Age	6.7	1.0	1.5	1.5	0.1	2.3	1.6
Schooling	6.7	10.9	3.3	90.7	3.8	2.1	23.4
Experience	86.7	73.2	74.3	71.5	65.2	63.6	53.1
Trained	-	2.1	2.3	1.8	3.1	3.4	3.1
Other	-	7.8	5.2	7.7	8.9	9.1	14.1
Production workers							
Gender	6.5	9.1	7.8	8.3	8.2	17.0	21.9
Age	-	4.8	5.8	6.0	7.5	14.8	10.9
Schooling	-	2.1	3.6	5.1	9.9	15.9	25.0
Experience	80.6	57.7	53.6	47.6	42.1	23.9	12.5
Trained	3.2	7.1	11.1	9.0	10.7	6.8	7.8
Other	9.7	19.1	18.0	24.1	21.7	21.6	21.9

PHILIPPINES

Factor	1-20	21-50	51-100	101-250	251-500.	501-1000	1001+
Clerical workers							
Gender	-	1.7	-	-	.8	-.	-
Age	.7	.3	-	-	-	-	-
Schooling	12.1	16.3	24.2	24.6	20.5	29.2	36.7
Experience	74.5	69.8	58.1	65.2	67.7	64.6	57.1
Trained	6.7	7.1	11.3.	6.8	7.1	1.5	4.1
Other	5.4	5.4	6.4	3.5	4.0	4.6	2.0
Production workers							
Gender	1.1	1.3	1.1	2.0	1.6	-	2.1
Age	1.9	-	-	.4	-	1.6	2.1
Schooling	.4	4.3	4.0	6.6	9.7	10.9	14.9
Experience	75.9	74.8	68.2	71.5	69.4	8.9	10.5
Trained	8.4	9.6	14.8	10.2	8.9	12.5	6.4
Other	12.3	10.0	12.0	9.4	10.5	11.0	8.5

As for <u>production workers</u>, there were major industrial differences. In Malaysia, a majority (51.2%) preferred men, but this varied widely by industry, with electronics' and textiles-and-garments' firms overwhelmingly preferring women (Table 10). Men were preferred in a large majority of firms in the basic metals, non-metallic mineral products, wood products and fabricated metal products sectors. Only in the paper and chemicals industries could one suggest that there was no sex segregation via recruitment.

In the Philippines, firms in the two industries in which women were preferred in Malaysia were also most inclined to recruit women, but not only did a larger proportion of firms in all industries (56.7%) prefer to recruit men, but a much higher proportion reported that they had no preference. Why should such overt discrimination be so much greater in Malaysia? Did the legislative background make any difference? One cannot answer this with the current data, but they are intriguing, derivative questions that deserve future sociological analysis.

Table 10: <u>Gender Preference in Recruitment of Clerical and Production Workers, by Industry, Malaysia, 1988</u>
(percent distribution of preference in sector)

Industry	Clerical Workers			Production Workers		
	Male	Female	Either	Male	Female	Either
Food,etc.	15.7	46.0	38.3	56.1	21.9	22.0
Textiles	3.1	70.3	26.6	10.1	73.1	16.8
Wood,etc.	8.5	61.0	30.5	69.1	11.6	19.4
Paper,etc.	3.0	49.7	47.3	42.6	19.1	38.3
Chem.,etc.	12.1	49.6	38.3	40.9	24.7	34.3
Non-metal.	10.2	61.1	28.7	70.6	8.7	20.6
Basic metals	5.4	63.5	31.1	75.3	6.5	18.2
Fabric. met.	3.1	67.1	29.8	62.0	19.4	18.6
Electronics	3.4	48.3	48.3	8.6	87.9	3.4
Other manuf.	4.3	67.4	28.3	22.0	52.0	26.0

Table 11: Gender preference in recruitment of clerical and
production workers, by industry, Philippines, 1990
(percent distribution of preference in sector)

	Clerical Workers			Production Workers		
	Male	Female	Either	Male	Female	Either
Industry						
Food,etc.	4.5	36.0	59.5	59.9	6.6	33.6
Textiles	1.3	36.7	62.0	15.8	27.2	57.1
Wood,etc.	3.7	47.6	48.8	66.0	3.0	31.0
Paper,etc.	2.1	46.3	51.6	63.7	2.9	33.3
Chemicals	-	41.0	59.0	57.7	4.9	37.4
Non-metal.min.	2.6	41.0	56.4	76.0	4.0	20.0
Basic metals	1.8	38.2	60.0	93.8	-	6.2
Fabric. met.	4.0	51.0	45.0	92.4	1.0	6.7
Electronics	-	38.1	61.9	45.2	26.2	28.6
Other manuf.	1.7	46.7	51.7	39.4	18.2	42.4
Trade	1.4	46.7	51.9	41.1	26.3	32.6
Construction	4.6	44.8	50.6	89.4	-	10.6
TOTAL	2.3	43.1	54.6	56.7	11.8	31.5

Table 12: Gender preference in recruitment of clerical and
production workers, by employment size of establishment,
Malaysia, 1988, and Philippines, 1990
(percent distribution of preference)

MALAYSIA

	Clerical Workers			Production Workers		
Size	Male	Female	Either	Male	Female	Either
1-4	26.7	60.0	13.3	67.7	22.6	9.7
5-20	9.5	67.8	22.7	60.6	19.1	20.3
21-50	9.1	66.4	24.5	54.3	20.6	25.1
51-100	8.5	55.6	35.9	49.1	25.7	25.2
101-500	7.6	46.8	45.6	49.5	26.2	24.3
501-1000	5.7	51.1	43.2	21.6	64.8	13.6
1001+	1.6	42.2	56.2	14.1	76.6	9.4

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	Clerical Workers			Production Workers		
Size	Male	Female	Either	Male	Female	Either
1-20	4.0	54.3	41.7	68.3	9.5	22.1
21-50	3.0	43.0	54.0	62.1	8.8	29.1
51-100	1.1	47.9	51.1	54.5	10.1	35.4
101-250	2.2	40.4	57.3	55.5	8.8	35.8
251-500	1.6	38.0	60.5	42.9	24.6	32.5
501-1000	-	39.7	60.3	42.6	14.7	42.6
1001+	2.0	24.5	73.5	30.6	26.5	42.9

As for size differences, in both Malaysia and the Philippines discrimination against women seemed much greater in small-scale firms, both as clerical and production workers (Table 12). Although this probably partially reflected the industrial composition of large and small firms, it was also probably due to the nature of production processes in large factories, the type of work in large assembly plants being conducive to that form of discrimination.

In an attempt to disentangle determinants of discrimination against women in the recruitment of production workers, a multiple regression model was estimated in which the dependent variable was a binary to represent a preference for women. Although a logit model would be preferable, in principle, the following function was estimated:

$$p(F) = \alpha + \beta_1 \Sigma_i I + \beta_2 \Sigma_j E + \beta_3 \Sigma_k O + \beta_4 X + \beta_5 W + \beta_6 C + \beta_7 U + \beta_8 S + e$$

where

p(F) = binary variable, 1 if preference for women, 0 otherwise;

I = set of binaries for industrial sectors, the omitted category being food processing, tobacco and beverages;

E = set of binaries for employment size of establishment, the omitted category being 1-20 workers;

O = ownership variables: FOREIGN, 1 if main ownership was foreign, 0 otherwise; CHINESE, 1 if main ownership was Chinese-Malaysian, 0 otherwise;

X = percent of output exported in previous year;

W = average wage in plant;

C = temporary/casual workers as percent of workforce in plant;

U = percent of workers in unskilled jobs;

S = percent of workers in semi-skilled jobs;

e = error term.

Table 13(a): Employer preference for female production workers Malaysia, 1988

(OLS Regression Results)

	Coefficient
Constant	0.623

Employment size

21-50	0.054
51-100	0.127***
101-250	0.072
251-500	0.313***
501-1,000	0.647***
1,000+	0.503***

Industry

Textiles, etc.	0.865***
Wood products	-0.217***
Paper products	-0.018
Chemicals, etc.	0.019
Non-metal. min.	-0.192***
Basic metals	-0.210**
Fabricated metal	0.030
Electronics	0.825***
Construction	
Trade	
Other manufacturing	0.498***
Foreign	0.238***
Chinese	0.119***
% Exported	0.001**
Average wage	-0.001***
% Temporary	0.003*
% Unskilled	0.001
% Semi-skilled	-0.001

$$R^2 = 0.28$$
$$F = 46.21$$
$$N = 2,592$$

Table 13(b): Employer preference for women as production workers, Philippines, 1990

(OLS regression results)

Variable	Preference for women Coeff.	Preference for men Coeff.
Constant	0.1294***	0.6288***
Industry		
Textile	0.1402***	-0.3319***
Wood prod.	-0.0774*	0.1110
Paper prod.	-0.0173	0.0229
Chemicals	-0.0425	-0.0236
Non-met.min.	-0.0271	0.1300**
Basic metals	-0.0595	0.3758***
Fabric.met.	-0.0479	0.3257***
Electronics	0.1676***	-0.0665
Construct.	-0.0458	0.3152***
Trade	0.1023***	-0.1375**
Other manuf.	0.1040**	-0.1556**
Size		
21-50	-0.0260	-0.0867*
51-100	0.0027	-0.1236**
101-250	-0.0114	-0.1337***
251-500	0.0898**	-0.1627***
501-1000	0.0027	-0.1797**
1001+	0.0772	-0.2874***
Foreign	0.0494*	0.0283
% exported	0.0011***	-0.0018***
Av. wage	-0.00003***	0.00002
% semi-skilled	0.0002	-0.0001
% unskilled	-0.0003	-0.0003
% temporary	-0.0003	0.0005
	$R^2 = 0.16$	$R^2 = 0.26$
	$F = 7.971$	$F = 15.13$

In the Philippines, though not in the earlier MLFS, we also asked employers whether they preferred to recruit men or women as professional or technical workers. Though nearly two-thirds reported that they had no preference, and although discrimination of this kind was apparently much less than in the case of production workers, discrimination against women was widespread (Table 14). It may have been slightly stronger in small firms, as with clerical and production workers, which if so was only partly due to the industrial composition of the sample of large and small firms. Of those preferring to recruit men as production workers, most (76.7%) claimed that it was because men had "more appropriate skills" for the work. By comparison, of those preferring women for production work, 83.6% gave that reason.

Table 14: Gender preference in recruitment of professional and technical workers, by Industry, and by Establishment Size, Philippines, 1990
(percent distribution of preference in sector)

	Male	Female	Either
Industry			
Food, etc.	27.3	5.0	67.5
Textiles	16.0	12.0	72.0
Wood, etc.	22.6	11.3	66.0
Paper, etc.	23.9	11.9	64.2
Chemicals	21.2	6.1	72.7
Non-metal. min.	22.2	3.7	74.1
Basic metals	33.3	-	66.7
Fabric. met.	41.1	2.7	56.2
Electronics	36.8	-	63.2
Other manuf.	27.5	20.0	52.5
Trade	20.1	16.1	63.8
Construction	53.1	3.1	43.2
TOTAL	27.3	8.8	63.8

Employment Size			
1-20	29.4	10.6	60.0
21-50	28.8	9.8	61.4
51-100	28.2	12.0	59.9
101-250	29.4	7.7	63.0
251-500	23.7	8.8	67.5
501-1000	20.3	7.8	71.9
1001+	23.4	-	76.6

Interestingly, many firms with a preference for men as production workers did not have a preference for men as professional or technical workers. The most common situation was a preference for men as production workers combined with an apparently non-discriminatory policy towards professional and

technical workers.[7]   Even so, given the widespread sex
discrimination admitted in the case of both manual and non-manual
jobs, those in the country concerned with overcoming sex
discrimination have a major challenge at higher job levels as well
as at the lower levels.

3.   Sex segregation by sector

    a.   Women's employment shares

    Explicitly stated preferences may not correspond to actual
outcomes or "revealed preference". Surprisingly, in both countries
about 3% of all manufacturing firms had no women workers. And in
both, the electronics and textiles sectors had the most firms in
which women comprised a majority of all workers (Table 15).
However, in Malaysia in both those industries women comprised over
75% of all workers in a majority of establishments, which was far
more than in the Philippines. Probably, the size structure of
firms partly explained the strong positive correlation between
employment size and the share of women, a point to which we will
return. But the basic tabulations raise the possibility that
internationally popular policy of boosting small enterprises
relative to large-scale could harm women's employment chances.

    The relationship between export-orientation and female
employment, about which so much has been written, is brought out
fairly conclusively in Table 16. It applied to both countries. By
contrast, most firms oriented to the domestic market employed small
percentages of women. This suggests that a structural adjustment
programme that involved a shift to export-led growth would promote
female employment, rather than male. This applies regardless of
one's causal speculation.

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    [7] This raises a more general point. One senses that a
disproportionate amount of attention has been directed at "middle-
class" discrimination against women. It is at the manual worker
level that most discrimination surely occurs. These data in a
small way support that view.

Table 15: Female Share of Employment, by Industry,
         Malaysia, 1988, and Philippines, 1990
         (percent distribution within sector)

Percent of Employment Female

	0	0.01-10	10.01-25	25.01-50	50.01-75	75.01+	Total

MALAYSIA

Industry

	0	0.01-10	10.01-25	25.01-50	50.01-75	75.01+	Total
Food,etc.	5.6	18.7	23.2	27.8	22.0	2.7	100.0
Textiles	2.1	0.8	3.7	12.1	23.3	57.9	100.0
Wood,etc.	6.1	25.7	31.8	22.6	11.9	1.9	100.0
Paper,etc.	-	3.0	15.1	55.1	23.0	3.6	100.0
Chem.,etc.	2.2	8.3	21.4	33.6	27.0	7.5	100.0
Non-metal.	2.4	26.2	30.9	30.9	9.5	-	100.0
Basic met.	3.8	32.9	40.5	16.5	5.1	1.3	100.0
Fabr.metal.	4.5	20.4	31.2	23.1	13.2	7.5	100.0
Electronics	-	-	-	13.8	20.7	65.5	100.0
Other manuf	3.8	1.9	7.7	26.9	30.8	28.8	100.0
TOTAL	3.8	16.2	23.5	26.8	18.7	11.0	100.0

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	0	0.01-10	10.01-25	25.01-50	50.01-75	75.01+	Total
Food,etc.	3.5	16.3	26.2	29.1	20.6	4.3	100.0
Textiles	1.6	3.8	4.8	29.6	26.3	33.9	100.0
Wood prod.	2.9	23.1	41.3	26.9	4.8	1.0	100.0
Paper prod.	3.9	6.9	47.1	32.4	7.8	2.0	100.0
Chemicals	1.6	20.5	29.1	35.4	10.2	3.1	100.0
Non-met.min.	8.0	36.0	34.0	20.0	2.0	-	100.0
Basic metals	6.2	63.1	21.5	7.7	-	1.5	100.0
Fabric.metal	7.4	55.6	26.9	8.3	0.9	0.9	100.0
Electronics	-	11.4	36.4	15.9	11.4	25.0	100.0
Other manuf.	1.5	16.2	19.1	33.8	11.8	17.6	100.0
Trade	1.3	8.8	25.9	25.0	21.1	18.0	100.0
Construction	-	65.9	23.9	8.0	1.1	1.1	100.0
TOTAL	2.8	22.9	26.2	24.4	12.8	10.9	100.0

Table 16: Female share of employment, by export orientation
of establishment, Malaysia, 1988, and Philippines, 1990

(percent distribution of female share for each export-
orientation category)

Percent of Employment Female

	0	0.01-10	10.01-25	25.01-50	50.01-75	75.01+
MALAYSIA						
% Exported						
0	6.7	18.8	26.5	26.2	16.3	5.5
1-10	0.9	8.9	22.5	31.7	27.4	8.6
11-25	1.1	18.3	22.2	32.2	18.9	7.2
26-50	1.6	16.8	24.2	26.3	22.1	8.9
51-75	1.3	27.3	23.3	26.7	15.3	6.0
76+	0.2	7.1	15.5	23.3	19.1	34.8
PHILIPPINES						
% Exported						
0	3.3	24.8	27.9	23.8	12.0	8.1
1-10	-	25.0	32.7	32.7	7.7	1.9
11-25	-	16.0	32.0	32.0	20.0	-
26-50	-	40.7	18.5	22.2	11.1	7.4
51-75	-	14.8	18.5	25.9	14.8	25.9
76+	-	11.8	12.4	27.1	19.4	29.4

To unravel the determinants of the female share of employment, the multiple regression model utilised earlier was estimated with the female percent of total employment being the dependent variable. For Malaysia, Table 17 shows a strong positive relationship between employment size of establishment and female share, only disrupted for the size group having between 100 and 250 workers. Perhaps this non-linearity has something to do with the changing occupational structure as a firm goes from small to medium; as it goes beyond the size of a foundry or family business, clerical and administrative staff are hired, mainly women, then beyond a certain size, the share of production operatives rises, and in many medium-sized, "craft"-oriented factories men comprise the majority. It may be that such craft work, rather than processing-assembly work, predominates in medium-sized firms, whereas in the large-scale firms a majority of workers are engaged in processing, which is typically assigned to women. What is clear is that beyond a workforce of about 250, the female share started to rise quite substantially, controlling for the influence of industry and other factors.

Also as expected, the greater the degree of labour casualisation, the higher the proportion of total employment consisting of women. By contrast, establishments with high shares of contract labour had fewer women, a pattern consistent with the nature of much of contract labour in Malaysian manufacturing, in

which quasi-independent male craftsmen are common in the wood products and fabricated metal foundries.

The observed influence of the industry variables were as expected. And even controlling for the influence of industry and establishment size, the more export-oriented the factory the higher women's share of employment.

Table 17: Women as percentage of employment, Malaysia and Philippines

(OLS regression results)

	Malaysia Coefficient	Philippines Coefficient
Constant	28.493***	34.2028***
Employment sizee		
21-50	3.250***	-2.2051
51-100	3.261**	-1.5613
101-250	-0.692	-3.5322*
251-500	6.539***	0.3631
501-1,000	9.986***	1.0031
1,000+	13.960***	1.6498
Industry		
Textiles, etc.	36.974***	22.3176***
Wood products	-8.771***	-15.5950***
Paper products	10.168***	-6.2304
Chemicals, etc.	5.235***	-5.5754*
Non-metal. min.	-5.534***	-12.5969***
Basic metals	-12.856***	-22.4926***
Fabricated metal	-2.594*	-21.4470***
Electronics	27.184***	4.0159
Construction		-19.8107***
Trade		9.2062***
Other manufacturing	24.529***	3.7431
% Casual	0.115**	0.0308
% Contract	-0.068***	-0.0579*
Foreign	0.668	-0.3762
% Exported	0.097***	0.1493***

$$R^2 = 0.35 \qquad R^2 = 0.37$$
$$F = 70.58 \qquad F = 34.61$$
$$N = 2,556 \qquad N = 1,311$$

For the Philippines, the results of a comparable function are also presented in Table 17. The positive relationship between size and female share was clearly less strong in the Philippines, but the strong positive relationship between export orientation and female share was similar to that found in Malaysia.

b. Changes in female employment share

As for changes in female employment, the countries differed. In Malaysia, since large export-oriented firms were those that grew most in the preceding three years, as shown in the report of the survey's main findings,[8] it was expected that female employment in manufacturing would have increased as well. That was the case.[9] Those establishments that expanded overall employment between 1985 and 1988 typically had much higher proportions of female employment than those that had cut employment or that had maintained their 1985 level (Table 18). This applied to most industries.

In the Philippines, there was no apparent relation between recent employment change and women's employment share (Table 19). However, in the PLFS (regrettably not in the MLFS) we also asked for employment by gender for two years prior to the time of the survey, allowing direct examination of changes. Overall, this showed there had been no strong net change in either direction (Table 20), although in most firms the proportion had changed in one direction or another. In the electronics sector, the female share certainly had increased, and in construction it had fallen significantly. Some of the other industrial changes were slightly more surprising, but in most cases the changes were small in either direction. A basic model was estimated to explain the change in percent female in the past two years.[10] The results in Table 21 indicate a rather poor fit; further work will be carried out. What they suggest is that the female share fell in those firms with above-average female shares and that there was an inverse relationship between utilisation of casual labour and women workers, an issue to which we will return.

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[8] G. Standing, Structural Adjustment in Malaysian Manufacturing (Geneva and Kuala Lumpur, ILO and EPU, 1991).

[9] A World Bank analysis argued that in Malaysia women industrial workers "lost ground" in the recession before 1988. These data do not support that claim. S. Horton, R. Kanbar and D. Mazumdar, Labour markets in an era of adjustment (Washington, DC, World Bank, 1991), p.51.

[10] The independent variables are as defined for Table 13. In addition, "work reorg." is a binary, with a value of 1 if the firm had reorganised its working system in the past two years, "new tech" is a binary, with a value of 1 if new technology in production had been introduced in the period, zero otherwise.

Table 18: Percent employment change 1985-1988, by percent female employment, Malaysia, 1988

(Percent distribution of establishments within each row)

Percent employment change

	Fell			No Change	Rose		
	Over 25	10.01 - 25	0.01 - 10	Change	0.01 - 10	10.01 - 25	Over 25
% female							
0	25.2	15.1	4.0	38.4	2.0	8.1	7.1
0.1<10	8.6	15.9	17.5	12.4	14.9	9.6	21.0
10-20	12.7	13.6	12.1	15.9	13.4	11.9	20.5
20.01-50	11.5	13.3	10.0	15.4	9.9	12.6	27.3
50.01+	9.3	12.4	8.9	8.3	10.2	13.9	36.9

Table 19: Change in total employment in past two years, by percent female employment, 1990, Philippines

(Percent distribution of establishments within each row)

	Fell %		No Change	Rose %		
	Over 10	0.01 - 10	Change	0.01 - 10	10.01 - 25	Over 25
Percent female						
0	23.5	5.9	41.2	–	8.8	20.6
0.1<10	13.1	10.9	14.2	16.4	17.9	47.4
10<25	16.7	10.9	23.7	16.7	14.6	17.3
25<50	18.2	10.3	24.1	16.2	14.1	17.2
50+	18.4	9.0	20.6	15.2	13.2	23.5

Table 20: <u>Change in women's employment share in past two years, by industry and by employment size, Philippines, 1990</u>

(Percent distribution of change in each sector)

%:	Fell			No Change	Rose		
	Over 50	10.01- 50	0.01 10		0.01- 10	10.01- 25	25.01- 50
Industry							
Food,etc.	0.8	4.7	32.0	27.3	30.5	3.1	1.6
Textiles	0.6	2.3	38.7	22.0	28.9	5.2	2.3
Wood prod.	–	6.3	30.2	26.0	35.4	2.1	–
Paper prod.	–	2.1	31.3	26.0	34.4	6.3	–
Chemicals	0.8	4.2	39.5	20.2	35.3	–	–
Non-met.min.	2.2	2.2	28.3	30.4	32.6	2.2	2.2
Basic metals	–	3.2	32.3	30.6	32.3	1.6	–
Fabric.met.	–	3.8	34.9	17.0	42.5	1.9	–
Electronics	–	–	32.6	9.3	55.8	2.3	–
Other manuf.	–	4.8	38.7	21.0	30.6	1.6	3.2
Trade	–	5.0	34.8	20.8	35.3	3.6	0.5
Construction	–	2.3	49.4	9.2	34.5	2.3	2.2
TOTAL	0.3	3.7	35.7	21.7	34.6	3.0	0.9
Employment Size							
1-20	0.4	5.9	20.6	46.6	21.3	3.2	2.0
21-50	0.3	5.4	32.3	25.0	33.5	2.8	0.6
51-100	0.5	3.3	40.2	15.2	36.4	3.8	0.5
101-250	–	2.0	41.6	11.0	42.4	2.7	0.4
251-500	–	0.8	47.1	6.7	41.2	1.7	2.5
501-1000	–	3.2	50.8	6.3	36.5	3.2	–
1001+	2.0	–	40.8	8.2	44.9	4.1	–

Table 21: Change in women's share of total employment, The Philippines, 1988-1990

(OLS regression results)

Change % female

Variable	Coeff.	t-ratio
Constant	2.8376	3.112***
Industry		
Textiles	2.6053	2.625***
Wood prod.	-2.2999	-2.019**
Paper prod.	-0.4913	-0.451
Chemicals	-1.8890	-1.554
Non-met.min.	-1.6326	-1.468
Basic met.	-2.1866	-1.727*
Fabric.met.	-2.3761	-2.207**
Electronics	1.2475	0.874
Other manuf.	0.4875	0.386
Construction	-1.3054	-1.148
Trade	0.3386	0.372
Size (1988)		
21-50	-0.1422	-0.211
51-100	0.0253	0.033
101-250	0.5644	0.757
251-500	0.3438	0.354
501-1000	-0.0231	-0.020
1001+	-0.3372	-0.231
% emp.change (1988-90)	0.0030	1.355
% female 1988	-0.0786	-7.433***
Foreign	-1.3855	-2.068**
% exported	0.0091	1.101
Change % non-regular	-0.0551	-3.201***
Work reorg.	0.4805	0.788
New tech.	-0.1115	-0.208

$$R^2 = 0.07$$
$$F = 3.59$$

c.   Expected Change in Women's Employment

Now let us briefly turn to the employers' intentions.   In Malaysia, not only had the female share of employment risen in more firms than in which it had fallen but many more expected female employment to rise relative to men's.   This was particularly so in foreign-owned firms (Table 22).   The main reason given for expecting the share to rise was that women were more suitable for the type of work being generated, although many cited lower wage costs or women's apparently greater adaptability to work demands (Table 23). Within each industry, the firms expecting overall employment to rise were also more likely to have a preference for women as production workers (Table 24). All this suggests the continuous growth of one form of "feminisation" of employment.

Does this imply that industrial sex segregation was declining? Was there any evidence that sectoral barriers for women were weakening or strengthening?   One way of considering this is to compare recruitment-level discrimination in growing and shrinking firms.   Table 24 suggests that in the food processing, wood products, paper products and chemicals sectors, sex segregation was weakening, since the firms expecting employment were far more likely than those expecting to cut employment to have no overt discriminatory recruitment practice. By contrast, in the garments and textile industry segregation was likely to strengthen even more, since firms expecting to expand were those already practising discrimination in favour of women. By contrast, discrimination in favour of men in non-metallic minerals, basic metals and fabricated metals industries could be expected to increase.

In the Philippines, most firms said they expected the female share to stay the same over the next two years, but whereas 11% expected the share to rise, only 1.9% expected it to fall (Table 25).   As more of the larger firms expected women's employment to grow, the overall increase in feminisation would probably be much greater than the bare numbers suggest. And not only did more firms expect women's share to rise whether they preferred men or women as production workers, but whereas only 7% of firms preferring men as production workers expected the female employment share to rise, 22% of those that preferred women expected the share to rise.

Table 22: Expected change in women's employment share
           in next two years, by Ownership, Malaysia, 1988
           (percent distribution within ownership categories)

	Increase	Decrease	No Change	Don't know
Foreign	24.7	2.6	70.6	2.1
Chinese Malaysian	16.3	2.8	76.8	4.0
Other Malaysian	12.3	6.3	76.4	5.0
Total	16.4	3.7	75.7	4.1

Table 23: Main reason for expecting to employ relatively
more women in next two years,
Philippines, 1990, and Malaysia, 1988
(percent distribution of reasons)

	Philippines	Malaysia
Main reason		
More suitable for work	-	48.5
Business growth	73.0	26.9
New tech./products/ work reorganisation	7.8	3.7
Business uncertainty	1.4	-
Lower wages	-	7.1
More adaptable	-	6.4
Other	7.1	5.3

Table 24: Expected employment change, by preference for production workers, by industry, Malaysia, 1988

(Percent distribution within sector for employment change)

Expected Employment Change

Preference:	Rise			Fall			Same		
	Male	Female	Either	Male	Female	Either	Male	Female	Either
Food,etc.	42.7	30.9	26.4	56.4	28.2	15.4	60.0	18.2	21.7
Textiles	9.8	73.7	16.7	18.2	45.4	36.4	9.2	73.5	17.3
Wood,etc.	51.9	20.7	27.4	58.3	8.3	33.3	77.9	8.0	14.1
Paper,etc.	39.4	25.8	34.8	(62.5)	(12.5)	(25.0)	42.5	15.0	42.5
Chem.,etc.	33.7	27.8	38.5	64.7	17.6	17.6	44.6	23.8	31.6
Non-metal.	73.8	11.9	14.3	81.8	-	18.2	69.5	8.4	22.1
Basic metal	80.9	4.8	14.3	*	*		74.5	7.8	17.6
Fabric.met.	50.0	28.0	22.0	53.8	23.1	23.1	70.2	15.3	14.5
Electronics	6.7	90.0	3.3	(16.7)	(83.3)	-	10.0	85.0	5.0
Other	4.5	63.6	31.8	*	*	*	40.9	40.9	18.2

Note: This table is based on the exclusion of those who stated "don't know" to expected employment change.

* indicates fewer than five observations.

Table 25: Expected change in women's employment share
         in next two years, by industry and employment size,
                 Philippines, 1990

             (percent distribution within sectors)

	Increase	Decrease	Unchanged
Industry			
Food,etc.	11.5	3.6	84.9
Textiles,etc.	9.9	3.3	86.7
Wood products	5.3	1.1	93.6
Paper products	9.0	-	91.0
Chemicals	10.5	-	89.5
Non-metal min.	18.4	-	81.6
Basic metals	3.1	1.6	95.3
Fabricated met.	6.5	2.8	90.7
Electronics	14.0	2.3	83.7
Other manuf.	18.2	-	81.8
Trade	16.7	1.8	81.4
Construction	8.0	3.4	88.6
TOTAL	11.1	1.9	87.1

Employment size			
1-20	10.4	-	89.6
21-50	7.2	0.9	91.9
51-100	9.7	4.3	85.9
101-250	12.4	1.9	85.7
251-500	16.3	4.7	79.1
501-1000	10.6	-	89.4
1001+	24.9	4.1	71.4

4.   <u>Sex segregation by labour status: External labour flexibility</u>

There are reasons for believing that a general feminisation of employment is associated with a growth of "external" labour flexibility, i.e.,   a shift to non-regular forms of labour relation.[11]   In Malaysia, those establishments that had resorted more to temporary or casual labour were more likely to prefer women as production workers (Table 26).   However, as a share of total employment women were less likely to be classified as temporary labour, and as they were also less likely to be contract labour, women made up a <u>smaller</u> proportion of non-regular workers generally (Tables 27).   This may seem to be a pedantic point, but it is a clue to the nature of the labour process.

In the Philippines, women were more likely to be in temporary labour statuses than in Malaysia, but the industrial pattern was similar (Table 28).   As a share of total female employment, the shares of non-regular employment were substantially higher than in Malaysia, with   particularly high percentages in garments and textiles, wood products and food processing (Table 29).

In Malaysia, non-regular forms of labour were more prevalent in smaller establishments for both men and women, and in this respect only in very large concerns were women <u>relatively</u> disadvantaged.   In the Philippines, in large-scale firms non-regular labour was greater for men but this was probably not so for women (Table 30).

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[11] Standing, 1989, op.cit.

Table 26: **Change in percent temporary employment in the past two years, by gender preference in recruitment of production workers, Malaysia, 1988**

(percent distribution of gender preference within each sector)

Change in Temporary Share of Employment

	Fell			No	Rose			
	>25	10.01 -25	0.1 -10	Change	0.1 -10	10.1 -25	25.10 -50	50.1+
Gender Preference								
Food,etc.								
Male	59.5	55.3	66.2	60.3	67.5	48.6	49.0	27.1
Female	28.6	25.9	17.5	14.0	14.3	24.3	20.4	41.7
Either	11.9	18.8	16.2	25.6	18.2	27.1	30.6	31.2
Textiles								
Male	13.0	7.1	−	33.3	8.7	11.4	11.1	5.4
Female	60.9	78.6	80.9	57.1	73.9	74.3	66.7	82.1
Either	26.1	14.3	19.0	9.5	17.4	14.3	22.2	12.5
Wood,etc.								
Male	72.4	76.2	86.5	82.5	71.7	61.4	67.4	51.8
Female	13.8	7.1	2.7	5.0	15.2	11.4	17.4	12.5
Either	13.8	16.7	10.8	12.5	13.0	27.3	15.2	35.7
Paper,etc.								
Male	45.4	47.6	47.8	50.0	60.0	35.0	38.5	32.3
Female	18.2	19.0	8.7	7.1	6.7	35.0	11.5	32.3
Either	36.4	33.3	43.5	42.9	33.3	30.0	50.0	35.5
Chemicals								
Male	48.3	37.9	51.0	43.2	51.9	40.0	41.2	26.6
Female	24.1	25.9	13.7	24.3	13.5	28.0	19.6	39.2
Either	27.6	36.2	35.3	32.4	34.6	32.0	39.2	34.2
Non-metallic								
Male	75.0	75.9	72.2	71.4	60.0	75.0	(60.0)	69.2
Female	3.1	13.8	11.1	3.6	13.3	8.3	(10.0)	15.4
Either	21.9	10.3	16.7	25.0	26.7	16.7	(30.0)	15.4
Basic metals								
Male	(66.7)	86.7	(71.4)	(71.4)	63.6	(75.0)	72.7	(83.3)
Female	−	−	(14.3)	−	18.2	(25.0)	−	−
Either	(33.3)	13.3	(14.3)	(28.6)	18.2	−	27.3	(16.7)
Fabric.Metal								
Male	66.7	67.8	66.7	79.4	54.5	56.1	59.0	48.9
Female	18.9	13.6	20.5	3.2	24.2	19.3	22.9	28.9
Either	14.4	18.6	12.8	17.5	21.2	24.6	18.0	22.2
Electronics								
Male	(10.0)	*	(16.7)	*	*	*	(10.0)	7.7
Female	(80.0)	*	(66.7)	*	*	*	(90.0)	92.3
Either	(10.0)	*	(16.7)	*	*	*	−	−

Note: There were too few cases in each category of "other manufacturing" to justify estimates.

Table 27: Percent non-regular, by sex, by employment size,
Malaysia, 1988

(Percent of each gender in non-regular work statuses)

	% men in non-regular				% women in non-regular			
	0	0.01<10	10-25	Over 25	0	0.01<10	10-25	Over 25
Emp.size								
1-20	43.9	3.7	16.4	36.1	67.2	0.8	6.1	25.8
21-50	54.9	8.8	9.7	26.6	73.2	3.9	5.6	17.1
51-100	61.5	9.2	6.5	22.7	73.7	4.5	6.3	15.2
101-250	59.2	11.5	9.0	20.3	72.4	5.5	7.7	14.3
251-500	58.3	16.6	13.9	11.2	63.6	14.4	9.6	12.3
501+	67.3	17.3	8.7	6.7	66.0	18.7	6.7	8.7

Table 28: Percent of female employment temporary, by Industry,
Philippines, 1990

(Percent with temporary shares in sector)

Percent temporary

Industry	0	0.01-20	Over 20
Food, etc.	76.3	8.9	14.8
Textiles,etc.	76.0	10.4	13.7
Wood products	88.1	1.0	10.9
Paper products	84.7	5.1	10.2
Chemicals,etc.	89.6	6.4	4.0
Non-metal min.	80.4	13.0	6.5
Basic metals	95.1	1.6	3.3
Fabric.metals	92.9	4.0	3.0
Electronics	74.4	14.0	11.6
Other manuf.	83.6	4.5	11.9
Trade	70.0	9.9	20.2
Construction	87.4	3.4	9.2
TOTAL	81.5	7.1	11.4

Table 29: Percent of female employment non-regular, by industry, Philippines, 1990
(Percent distribution of firms in each sector)
Percent non-regular

Industry	0	0.01<10	10<25	Over 25
Food, etc.	47.8	10.3	11.8	30.1
Textiles, etc.	37.2	25.7	14.8	22.4
Wood products	50.5	3.0	7.9	38.6
Paper products	58.2	8.2	6.1	27.6
Chemicals	73.4	9.7	8.1	8.9
Non-metal min.	58.7	8.7	10.9	21.9
Basic metals	75.4	6.6	3.3	14.8
Fabricated met.	76.0	5.0	7.0	12.0
Electronics	61.4	13.6	11.4	13.6
Other manuf.	50.7	10.4	11.9	26.9
Trade	50.7	12.9	12.4	24.0
Construction	65.9	3.4	9.1	21.6
TOTAL	56.1	11.2	10.2	22.5

Table 30: Percent of employment non-regular, by employment size, by sex, Philippines, 1990
(Percent distribution of firms in each size category)

	% men non-regular				% women non-regular			
	0	0.0<10	10-25	Over 25	0	0.01<10	10-25	Over 25
Employment Size								
1-20	46.3	5.5	13.2	34.9	59.1	1.2	7.1	32.5
21-50	49.8	16.1	11.1	22.9	61.7	7.0	11.7	19.6
51-100	38.1	19.6	20.6	21.7	63.7	10.0	13.7	12.6
101-250	34.1	23.2	14.6	28.1	55.1	16.5	12.0	16.5
251-500	34.6	20.0	10.0	35.4	49.2	16.2	14.6	20.0
501-1000	17.6	22.1	14.7	45.6	31.9	26.1	11.6	30.4
1001+	18.4	24.5	24.5	45.6	32.7	30.6	18.4	18.4

Table 31: Percent of employment non-regular, by percent female, Philippines, 1990
(Percent distribution within each female share category)
Percent non-regular

% female employment	0	0.01-10	10.01-25	25.01-50	50.01-75	75.01+	Total
0	21.6	8.1	10.8	21.6	24.3	13.5	100.0
.01-10	34.7	19.0	10.7	14.0	8.3	13.3	100.0
10.01-25	38.3	19.9	14.3	12.6	7.0	7.9	100.0
25.01-50	35.3	18.4	23.1	10.9	8.1	4.1	100.0
50.01-75	33.5	24.6	14.4	16.2	7.8	3.6	100.0
75.01+	31.5	22.4	21.0	9.1	9.1	7.0	100.0

There was also no evidence that in the Philippines firms with high percentages of non-regular workers had high female shares (Table 31). Perhaps in the Philippines as well, women's employment has been a substitute for non-regular employment.

There is another aspect of labour status that is too rarely captured by published statistics. Within the broad category of wage workers, one should distinguish sub-categories according to the basis on which they are paid, since those receiving monthly salaries, for example, have greater income security than those paid on a daily or piece-rate basis. Most labour analysts agree that piece-rate workers are the most easily "sweated" - in the time-honoured jargon - and most insecure.

In that regard, in Malaysia women were more likely to be paid on a piece rate or hourly basis, whereas far more men were paid on a monthly basis (Table 32). As can be seen, the differences were less marked in the Philippines, further evidence that women's labour market position in Malaysia was more disadvantaged.

Table 32: Regular wage workers' basis by which paid,
by skill and by sex,
Malaysia, 1988, and Philippines, 1990

| | MALAYSIA | | | | PHILIPPINES | | | |
| | Skilled | | Unskilled | | Skilled | | Unskilled | |
	Male	Female	Male	Female	Male	Female	Male	Female
Hourly,daily	30.8	36.9	52.7	58.1	36.3	36.9	43.3	43.3
Monthly,weekly	66.9	53.8	46.0	39.6	59.9	57.2	54.9	51.8
Piece rate	2.1	8.7	1.1	2.2	2.6	4.8	1.4	4.0
Other	0.2	0.6	0.2	0.1	1.2	1.1	0.4	0.9

Note: In Malaysia, only a very few firms paid regular workers on a weekly basis.

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5. Segregation by Training

In the Philippines, but not in Malaysia, we also asked employers whether they were more likely to provide training to either men or women. This form of discrimination has received surprisingly little empirical study. Given a normal tendency for respondents to wish to appear "good employers", any evidence of such overt discrimination must be treated as an understatement of its real extent.

There are two forms of structural disadvantage that women could experience in this respect -- they could face discrimination within any given firm or they could find themselves concentrated in firms that provide little or no training. On the first, Table 33 shows that one in every five firms admitted to giving a preference to men and 4% said they gave a preference to women, the latter mainly because of the pattern of sex-stereotyping of jobs in garments and textiles and in electronics. Most firms reported

that the main reason for preferring men (or women) was "type of work" -- i.e., classic discrimination -- and those firms that stated a preference for recruiting men for production jobs were most likely to report that training was more likely to be provided to men. Such "preference" discrimination against women was greater in small firms (Table 33), and was more common in Filippino private sector firms than in either public or foreign firms.

However, firms with high percentages of women in total employment were, if anything, more likely to provide training and retraining - at the recruitment level, to improve job performance or to shift workers between jobs at the same level and to enable them to be upgraded. Thus, as Table 34 shows, whereas none of the firms without women workers provided all three forms of training, over 24% of those in which more than three-quarters of their workers were women provided all three forms. So, the structural distribution of employment and training pattern tended to correct, to some extent, the subjective discrimination by individual employers.[12]

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[12] Elsewhere, an experimental "Human Resource-oriented enterprise" (HRE) index is created, designed as a proxy for a relatively good type of firm as far as labour and employment practices. Low scores of HRE are found in firms with low percentage shares of women, and vice-versa. G. Standing "Identifying the Human Resource-oriented Enterprise: A South-East Asian Example", International Labour Review (1992, forthcoming).

Table 33: Gender preference in providing training, by Industry and by Employment Size, Philippines, 1990

(Percent distribution, by sector or size category)

Training more likely to be provided for

Industry	Men	Women	No difference
Food, etc.	10.9	1.8	87.3
Textiles, etc.	7.1	15.5	77.4
Wood products	29.5	-	70.5
Paper products	21.6	-	78.4
Chemicals	16.9	1.3	81.8
Non-metal.min.	32.1	-	67.9
Basic metals	39.1	-	60.9
Fabricated met.	45.2	1.6	53.2
Electronics	25.0	3.1	71.9
Other manuf.	16.1	6.5	77.4
Trade	11.5	5.7	82.8
Construction	43.3	-	56.7
TOTAL	21.1	4.1	74.8

Employment size	Men	Women	No difference
1-20	23.5	3.7	72.8
21-50	31.1	4.4	64.4
51-100	21.0	5.0	74.0
101-250	19.6	0.6	79.7
251-500	16.0	6.2	77.8
501-1000	10.9	10.9	78.3
1001+	10.5	2.6	86.8

Table 34: Training pattern of firms, by percent female of
employment, Philippines, 1990

(Percent distribution of each female share category
providing specified training)

Percent female

Training	0	0.1-10	10.01-25	25.01-50	50.01-75	75.01+
No training	70.3	50.8	53.5	50.9	51.5	43.7
Initial training only	18.9	13.4	14.0	13.2	12.6	12.7
Training + retraining*	8.1	7.7	8.5	10.4	9.0	15.5
Training + upgrading*	-	3.0	3.2	2.2	3.6	2.8
Retraining + upgrading	2.7	1.3	1.8	2.5	1.8	0.7
All forms of training	-	23.7	19.0	20.8	21.6	24.6

Note: * "Retraining" refers to retraining to improve job
performance at the grade or to move workers within jobs
of similar grades; "Upgrading" refers to retraining for
upgrading or promotion.

6.   Sex segregation by occupational crowding

One potential cause of women's labour market disadvantage is what has been described as crowding into a smaller range of jobs than are available to men. This hypothesis was first presented by Edgeworth in 1922, though many have incorrectly attributed it to Bergmann.[13]   The crowding hypothesis does not   explain the existence of persistent occupational segregation, which has been attributed to various types of discrimination that need not be reviewed here. However, it is important to identify whether it does exist and if so in what form.

If there is overcrowding of some disadvantaged group, such as women, into a narrower range of jobs than are open for other groups, wages of all groups of workers in those jobs are likely to be reduced (presuming wages respond to demand and supply), and the wages of women in those occupations will fall, which is also likely to lower women's reservation and aspiration wages generally.[14]

It is difficult to assess the pattern of job segregation, and one should feel uncomfortable with all conventional concepts in this sphere.[15] We can only stress that more finely disaggregated analyses and data are required and that it is hoped that the following gives a reasonable sketch of the industrial pattern of job segregation.   Table 35 indicates that for the Philippines, women comprised a far higher proportion of "higher-level" jobs than of manual positions, a fairly unusual pattern. Yet for each

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[13]   O. Duncan and B. Duncan, "A methodological analysis of segregation indices", American Sociological Review, Vol. 20, 1955, pp.210-17. The Duncan index has been widely used, but also widely critiqued in recent years. See, e.g., Z. Tzannatos, "Employment segregation: Can we measure it and what does the measure mean?", British Journal of Industrial Relations, Vol. 28, 1990, pp.105-11. It is clearly correct that the greater the disaggregation of occupations, the greater the degree of job segregation that is likely to be observed. W.T. Bielby and J.N. Baron, "Men and women at work: Sex segregation and statistical discrimination", American Journal of Sociology, Vol. 91, No. 4, 1986, pp.759-99.

[14]   F.Y. Edgeworth, "Equal pay to men and women", Economic Journal, Vol. 32, Dec. 1922, pp.431-57. Its roots can be found in E.J. Rathbone, "The remuneration of women's services", Economic Journal, Vol. 27, 1917, pp.55-68. Bergmann is the author most often cited as having originated the crowding hypothesis. B.R. Bergmann, "Occupational segregation, wages and profits when employers discriminate by race and sex", Eastern Economic Journal, No. 1, April-July, 1974, pp.103-110.

[15]   This applies in particular to the notions of "skill", "occupation" and "job", all of which are multidimensional and open to a variety of definitions, some of which are gender-biased. On these issues, see G. Standing, "A labour status approach to labour statistics" (Geneva, ILO, 1983); on skill per se, see S. Horrell, J. Rubery and B. Burchell, "Gender and skills", Work, Employment and Society, Vol. 4, No. 2, June 1990, pp.189-216.

occupational level (and one recognizes that a one-digit classification is rather crude), there were wide inter-industry and intra-industry differences. Another stylised pattern, revealed in Table 36, is that whereas women comprised a larger proportion of managerial, administrative and clerical jobs in small firms than in large-scale establishments, the reverse was the pattern for manual jobs, including supervisory levels.

Table 35: Female share of occupational groups, by industry,
Philippines, 1990
(Percent distribution of establishments in sector with
specified female shares)
Female percent of occupational group

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var

MANAGERIAL AND ADMINISTRATIVE

Industry

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
Food, etc.	37.9	12.9	18.6	22.1	8.6	28.0	0.91
Textiles	20.9	8.7	22.0	34.1	14.3	40.6	1.34
Wood products	29.1	3.9	17.5	32.0	17.5	40.7	1.17
Paper products	33.7	7.0	16.8	28.7	13.9	34.6	1.06
Chemicals	36.5	19.0	18.3	19.0	7.1	26.9	0.95
Non-metal.min.	36.0	8.0	20.0	24.0	12.0	30.8	0.97
Basic metals	50.0	12.5	14.1	21.9	1.6	19.9	0.80
Fabric.metals	44.3	19.8	19.8	13.2	2.8	18.8	0.82
Electronics	31.8	25.0	27.3	13.6	2.3	22.6	0.97
Other manuf.	27.9	4.4	16.2	30.9	20.6	42.0	1.22
Construction	29.5	26.2	22.7	19.3	2.3	23.3	1.01
Trade	26.8	8.1	21.9	26.3	17.0	39.3	1.18
TOTAL	32.2	12.1	19.8	24.8	11.1	32.3	1.04

PROFESSIONAL AND TECHNICAL

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
Food, etc.	17.6	9.5	13.5	33.8	25.7	50.2	1.50
Textiles	22.0	1.8	14.7	29.4	32.1	54.0	1.48
Wood products	36.7	-	22.4	20.4	20.4	38.5	1.05
Paper products	25.9	11.1	16.7	22.2	24.1	43.2	1.17
Chemicals	21.2	12.9	17.6	24.7	23.5	43.3	1.29
Non-metal.min.	32.0	20.0	24.0	12.0	12.0	28.9	0.93
Basic metals	40.0	11.4	17.1	11.4	20.0	33.6	0.88
Fabric.metals	40.6	23.5	14.1	9.4	12.5	25.6	0.78
Electronics	34.3	17.1	28.6	14.3	5.7	25.0	0.95
Other manuf.	27.3	6.1	6.1	27.3	33.3	49.8	1.25
Construction	44.6	29.2	9.5	6.8	-	11.8	0.76
Trade	34.2	6.9	12.8	17.1	29.1	43.4	1.08
TOTAL	30.4	12.6	15.4	20.2	21.5	39.1	1.08

CLERICAL

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
Food, etc.	4.6	4.6	10.2	25.0	55.6	73.3	2.46
Textiles	2.7	2.0	7.5	21.8	66.0	79.0	3.12
Wood products	3.8	1.3	3.8	25.6	65.4	80.0	2.97
Paper products	4.4	3.3	11.0	19.8	61.5	77.5	2.55
Chemicals	0.9	3.5	8.8	31.6	55.3	76.7	3.05
Non-metal.min.	5.1	2.6	15.4	12.8	64.1	73.3	2.31
Basic metals	3.7	3.7	13.0	24.1	55.6	73.7	2.42
Fabric.metals	6.0	1.0	9.0	28.0	56.0	74.5	2.52
Electronics	-	-	9.5	23.8	66.7	80.2	4.01
Other manuf.	1.7	-	-	26.7	71.7	83.8	4.01
Construction	5.9	4.7	15.3	28.2	45.9	64.8	2.09
Trade	1.9	1.0	8.7	22.2	66.2	79.3	3.19
TOTAL	3.3	2.3	9.1	24.4	60.9	76.6	2.79

	Female percent of occupational group						
	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var

SALES AND SERVICE WORKERS

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
Food, etc.	35.5	26.9	11.8	8.6	17.2	29.3	0.81
Textiles	28.2	10.7	23.3	17.5	20.4	39.0	1.10
Wood products	55.1	6.1	12.2	4.1	22.4	29.4	0.73
Paper products	52.5	13.1	14.8	11.5	8.2	21.2	0.69
Chemicals	56.0	23.8	8.3	7.1	4.8	15.3	0.60
Non-metal.min.	52.4	19.0	9.5	4.8	14.3	22.9	0.64
Basic metals	57.6	21.3	6.1	3.0	12.1	16.5	0.53
Fabric.metals	58.8	11.7	16.2	8.8	4.4	16.0	0.61
Electronics	56.0	20.0	8.0	-	16.0	21.8	0.60
Other manuf.	48.6	14.3	11.4	8.6	17.1	26.9	0.77
Construction	69.4	16.7	5.6	2.8	5.6	10.6	0.41
Trade	30.5	12.8	10.3	24.1	22.2	39.4	1.11
TOTAL	43.9	15.8	12.5	12.6	15.3	28.0	0.81

SUPERVISORS

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
Food, etc.	40.9	26.9	15.1	11.8	5.4	20.9	0.77
Textiles	23.8	14.0	16.8	21.7	23.8	42.5	1.21
Wood products	65.7	15.0	10.4	7.5	1.5	10.1	0.52
Paper products	54.4	10.3	17.6	7.4	10.3	20.9	0.68
Chemicals	46.0	18.0	18.0	9.0	9.0	22.1	0.73
Non-metal.min.	56.7	30.0	6.7	6.7	-	8.8	0.57
Basic metals	87.8	6.1	2.0	4.1	-	3.9	0.29
Fabric.metals	81.8	10.2	6.8	-	1.1	4.4	0.32
Electronics	30.6	22.2	19.4	16.7	11.1	31.2	1.02
Other manuf.	55.1	12.3	10.2	4.1	18.4	23.9	0.71
Construction	78.1	13.7	5.5	2.7	-	4.3	0.37
Trade	32.0	13.8	17.0	12.4	24.8	38.3	1.02
TOTAL	50.1	15.4	13.3	9.9	11.4	22.8	0.72

SKILLED WORKERS

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
Food, etc.	64.4	15.4	10.6	8.7	1.0	11.6	0.55
Textiles	13.5	3.0	17.5	25.1	40.9	58.9	1.79
Wood products	63.5	19.8	10.4	3.1	3.1	11.2	0.54
Paper products	50.5	27.5	15.4	5.5	1.1	13.4	0.72
Chemicals	61.3	13.2	11.3	10.4	3.8	14.6	0.61
Non-metal.min.	78.9	7.9	7.9	5.3	-	6.1	0.42
Basic metals	88.7	5.7	3.8	-	1.9	3.4	0.23
Fabric.metals	85.6	13.5	-	1.0	-	1.9	0.25
Electronics	39.0	22.0	7.3	9.8	22.0	31.4	0.84
Other manuf.	54.4	12.3	10.5	8.8	14.0	23.1	0.70
Construction	94.4	2.8	1.4	-	1.4	2.2	0.18
Trade	73.9	7.2	9.0	5.4	4.5	11.0	0.45
TOTAL	59.8	12.0	9.8	8.5	9.9	18.9	0.62

Female percent of occupational group

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
			SEMI-SKILLED WORKERS				
Food, etc.	42.5	20.6	13.7	9.6	13.7	25.9	0.75
Textiles	18.9	5.7	17.9	17.9	39.6	56.3	1.53
Wood products	63.8	13.8	13.8	8.6	-	12.5	0.62
Paper products	50.0	15.0	16.7	5.0	13.3	22.7	0.70
Chemicals	65.0	10.0	5.0	15.0	5.0	16.5	0.59
Non-metal.min.	60.0	12.0	4.0	20.0	4.0	16.7	0.59
Basic metals	91.2	5.8	-	-	2.9	3.4	0.20
Fabric.metals	90.3	6.4	-	1.6	1.6	3.3	0.22
Electronics	58.8	5.9	5.9	17.6	11.8	24.8	0.70
Other manuf.	45.7	8.6	11.4	8.6	25.7	32.3	0.87
Construction	100.0	-	-	-	-	0.0	-
Trade	74.5	4.3	6.4	4.3	10.6	15.8	0.50
TOTAL	58.7	9.5	9.5	9.2	13.2	22.5	0.66
			UNSKILLED WORKERS				
Food, etc.	40.2	14.9	18.4	13.8	12.6	29.3	0.85
Textiles	18.3	8.6	24.7	20.4	28.0	48.0	1.45
Wood products	58.3	14.6	14.6	4.2	8.3	17.9	0.60
Paper products	58.5	7.5	11.3	11.3	11.3	23.2	0.68
Chemicals	53.8	12.3	20.0	9.2	4.6	17.8	0.69
Non-metal.min.	84.6	11.5	3.8	-	-	2.8	0.27
Basic metals	90.0	6.6	3.3	-	-	1.9	0.24
Fabric.metals	78.5	9.3	4.6	3.1	4.6	8.0	0.37
Electronics	47.6	-	28.6	9.5	14.3	29.4	0.85
Other manuf.	40.6	6.2	18.8	12.5	21.9	33.7	0.92
Construction	98.0	-	2.0	-	-	0.8	0.14
Trade	78.2	11.5	2.3	4.6	3.4	7.7	0.40
TOTAL	58.8	9.6	12.9	8.7	10.0	20.3	0.65

Table 36: Female share of occupational groups, by employment size,
Philippines, 1990
(Percent distribution of establishments in size category
with specified female share)
Female percent of occupational group

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var

MANAGERIAL AND ADMINISTRATIVE

Emp.size

1-20	42.5	1.1	6.2	29.8	20.4	37.5	0.99
21-50	37.2	4.1	16.6	31.9	10.3	33.2	1.05
51-100	32.4	7.0	25.5	23.4	11.7	33.2	1.08
101-250	29.2	17.6	26.6	18.4	8.2	29.2	1.05
251-500	23.3	19.4	31.8	19.4	6.2	30.3	1.17
501-1000	15.9	37.7	23.2	21.7	1.4	26.7	1.17
1001+	2.1	62.5	20.8	10.4	4.2	24.2	1.14
TOTAL	32.2	12.1	19.8	24.8	11.1	32.3	1.04

PROFESSIONAL AND TECHNICAL

1-20	49.2	1.6	3.3	13.1	32.8	40.9	0.91
21-50	39.0	2.5	8.8	18.2	31.4	44.1	1.05
51-100	37.5	7.5	10.0	20.8	24.2	39.2	1.01
101-250	27.0	16.2	21.6	19.6	15.7	35.7	1.10
251-500	22.9	18.4	19.3	24.8	14.7	37.6	1.20
501-1000	19.3	29.8	21.1	17.5	12.3	32.0	1.13
1001+	2.3	25.0	25.0	29.5	18.2	47.1	1.64
TOTAL	30.4	12.6	15.4	20.2	21.5	39.1	1.08

CLERICAL

1-20	6.2	-	2.8	9.0	82.1	86.9	3.09
21-50	7.6	1.0	7.3	18.8	65.3	77.5	2.46
51-100	0.5	-	6.5	30.4	62.5	80.6	3.59
101-250	1.1	4.2	11.7	29.8	53.2	72.6	2.87
251-500	1.6	2.4	8.7	31.0	56.3	74.1	3.11
501-1000	-	4.4	17.6	27.9	50.0	70.4	2.84
1001+	-	12.2	22.4	30.6	34.7	61.9	2.30
TOTAL	3.3	2.3	9.1	24.4	60.9	76.6	2.79

SALES AND SERVICE WORKERS

1-20	53.1	4.1	5.2	15.6	21.9	32.5	0.82
21-50	52.6	5.3	8.1	14.4	19.6	30.3	0.80
51-100	47.4	14.3	11.3	13.5	13.5	26.8	0.77
101-250	45.5	20.5	15.5	8.0	10.5	22.8	0.75
251-500	25.0	22.8	19.6	15.2	17.4	34.1	1.03
501-1000	23.9	39.1	17.4	10.9	8.7	24.0	0.84
1001+	20.0	40.0	20.0	11.4	8.6	26.4	0.89
TOTAL	43.9	15.8	12.5	12.6	15.3	28.0	0.81

Female percent of occupational group

	0	.01<25	25<50	50<75	75+	Mean % fem.	Coeff. of var
SUPERVISORS							
1-20	81.4	-	1.4	1.4	15.7	16.5	0.46
21-50	69.5	3.6	8.5	7.2	11.2	18.1	0.56
51-100	58.2	7.1	15.9	10.6	8.2	19.9	0.67
101-250	46.2	17.4	17.8	8.1	10.5	22.6	0.77
251-500	31.0	25.4	12.7	16.7	14.3	31.2	0.94
501-1000	10.8	41.5	16.9	18.5	12.3	31.5	1.05
1001+	8.3	50.0	16.7	12.5	12.5	31.3	1.05
TOTAL	50.1	15.4	13.3	9.9	11.4	22.8	0.72
SKILLED WORKERS							
1-20	76.2	1.1	6.3	7.9	8.5	14.7	0.49
21-50	65.8	11.7	8.8	6.3	7.5	15.1	0.55
51-100	59.9	13.3	9.6	9.6	7.6	17.5	0.64
101-250	58.4	13.9	13.0	9.7	5.0	16.7	0.64
251-500	44.7	15.8	8.8	10.5	20.2	29.3	0.81
501-1000	50.8	18.7	10.2	5.1	15.3	22.9	0.68
1001+	17.4	26.1	15.2	13.0	28.3	41.6	1.08
TOTAL	59.8	12.0	9.8	8.5	9.9	18.9	0.62
SEMI-SKILLED WORKERS							
1-20	77.4	2.2	5.4	7.5	7.5	13.8	0.47
21-50	65.5	8.6	5.8	5.8	14.4	20.5	0.59
51-100	58.7	5.5	7.6	14.1	14.1	25.6	0.71
101-250	58.2	11.6	9.6	9.6	11.0	20.9	0.67
251-500	44.6	10.9	17.6	10.8	16.2	28.2	0.83
501-1000	42.9	11.9	16.7	14.3	14.3	29.5	0.83
1001+	33.3	27.8	13.9	2.8	22.2	30.6	0.82
TOTAL	58.7	9.5	9.5	9.2	13.2	22.5	0.66
UNSKILLED WORKERS							
1-20	75.5	1.1	7.4	3.2	12.8	17.1	0.50
21-50	66.4	4.7	10.7	8.7	9.4	18.3	0.59
51-100	56.8	9.0	10.2	15.9	8.0	20.9	0.69
101-250	62.0	9.4	12.0	9.3	7.3	18.0	0.62
251-500	48.9	15.9	18.2	6.8	10.2	21.5	0.73
501-1000	43.1	11.8	21.6	9.8	13.7	27.8	0.87
1001+	21.6	35.1	21.6	5.4	16.2	30.4	0.96
TOTAL	58.8	9.6	12.9	8.7	10.0	20.3	0.65

In the previous two years, the female share of so-called white-collar jobs had slightly increased, that is, at the managerial, administrative, professional and technical and clerical levels (Tables 37 - 38). It had decreased among sales and service jobs and risen among semi-skilled jobs. The data suggest that although there was occupational segregation in Filippino industry, it was not rigid; there had been some upgrading of women's occupational status. And those firms that in 1988 had a high percent of women in total employment were relatively likely to have increased their female share of management, professional and technical employees and to have cut their share of manual workers (Table 9).

There are various measures of occupational crowding, and no consensus on the superiority of any one measure, even though the Duncan index has been the most popular.[16] Table 40 gives the distribution of firms by an occupational crowding index defined as follows:

$$OC = (f_i + 1/m_i + 1)/(F + 1/M + 1).$$

where f_i, m_i refer to the percent of the firm's employment in occupational group i comprising women and men respectively, and F, M are the percent of women and men respectively in total employment in all industries. Defined in this way, if the male and female share of any firm's occupational category corresponds to the labour force composition the crowding index will have a value of unity, indicating non-crowding. Those firms for which the value of OC is below unity have a disproportionately large number of men, those above it have a relative over-representation of women. As Table 40 shows, what is remarkable is that even if the band around unity is made fairly large, most firms for all occupational groups deviated from the norm.

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[16] O. Duncan and B. Duncan, "A methodological analysis of segregation indices", <u>American Sociological Review</u>, Vol 20, 1955, pp.210-17. The Duncan index has been widely used, but also widely critiqued in recent years. See, e.g. Z. Tzannatos, "Employment segregation: Can we measure it and what does the measure mean?", <u>British Journal of Industrial Relations</u>, Vol. 28, 1990, pp.105-11. It is clearly correct that the greater the disaggregation of occupations, the greater the degree of job segregation that is likely to be observed. W.T. Bielby and J.N. Baron, "Men and women at work: Sex segregation and statistical discrimination", <u>American Journal of Sociology</u>, Vol. 91, No. 4, 1986, pp.759-.999.

Table 37: Change in percent female by occupational level,
by industry, Philippines, 1988-1990

(percent change in female share in occupational
group, within sector)

	Managt. Admin.	Prof. tech.	Cler.	Sales Serv.	Super- visory	Skill.	Semi skill.	Unsk.
Industry								
Food,etc	-1.20	2.52	-0.82	-0.43	-0.49	-0.74	0.11	0.71
Textiles	-2.28	-0.12	-0.67	-4.97	-0.63	1.58	4.50	-1.44
Wood prod.	1.30	-0.50	1.31	-1.11	-0.53	-1.07	-0.81	-3.67
Paper prod.	0.29	-1.84	0.59	-2.89	-0.27	0.35	-0.44	5.88
Chemicals	0.12	-0.87	0.62	-3.06	1.47	-0.34	1.19	2.00
Non-met.min.	-1.13	1.38	4.16	-2.98	0.62	-3.06	5.93	-0.38
Basic met.	-0.41	3.85	4.13	-2.98	0.11	-0.11	0.49	-3.34
Fabric.met.	-0.74	2.17	3.21	-0.95	-0.98	-0.24	0.67	0.44
Electronics	-0.66	0.06	-0.20	-3.44	1.17	0.96	9.52	-2.46
Other manuf.	0.09	6.18	2.25	-0.28	0.81	0.16	0.20	3.90
Construction	1.60	-1.60	-0.18	-1.32	0.20	0.74	-0.12	-0.23
Trade	0.38	1.46	0.36	-0.15	-0.36	-0.56	2.50	-2.56
TOTAL	0.36	0.66	0.82	-1.74	-0.07	-0.02	1.66	-0.10

Table 38: Change in percent female, by occupational level,
by employment size, Philippines, 1988-1990

(Percent change in female share in occupational
group, within sector)

	Managt. Admin.	Prof. tech.	Cler.	Sales Serv.	Super- visory	Skill.	Semi skill.	Unsk.
Emp.size								
1-20	0.10	-2.33	2.77	-0.50	3.11	0.19	-1.69	0.04
21-50	0.23	1.43	0.82	-1.61	-0.26	-0.78	2.77	-0.39
51-100	-0.12	3.60	1.90	-0.31	0.13	0.29	1.64	2.87
101-250	0.95	0.02	0.05	-3.34	-0.49	0.25	2.48	-1.33
251-500	0.70	-1.09	-0.07	-0.24	-0.93	0.77	3.46	-1.36
501-1000	0.47	-1.79	-0.34	-3.31	-0.78	0.32	2.50	1.48
1001+	0.35	3.94	-0.84	-3.73	1.11	-1.59	-2.50	-0.61

Table 39: <u>Change in percent female, by occupational category,</u>
<u>by female percent share of production workers,</u>
<u>Philippines, 1988-1990</u>

(Percent change in female share in occupational group
in size group)

% female prod. wkrs	Managt. Admin.	Prof. tech.	Cler.	Sales Serv.	Super- visory	Skill.	Semi skill.	Unsk.
0	0.19	0.66	1.39	-2.24	-0.12	0.68	1.28	1.32
.01<10	0.18	0.22	0.81	0.90	0.69	0.83	0.16	3.06
10<25	-0.62	1.37	2.61	-3.44	0.05	1.08	-2.52	-1.97
25<50	0.46	-0.38	0.07	-0.61	-0.60	-0.50	-0.29	0.93
50<75	0.82	2.43	0.48	-2.28	-0.68	0.10	1.61	-5.01
75+	1.97	1.71	-1.69	-6.95	0.38	-4.56	-0.78	-4.66

Table 40: <u>Female occupational crowding index, by occupation,</u>
<u>Philippines, 1990</u>

(Percent distribution within occupational group)

| Occupational category | Crowding Index | | | |
	<0.75	0.75-1.25	1.251 -10.33	10.34+
Managerial,admin.	48.9	10.5	31.6	9.0
Profess.,technicians	47.9	9.0	26.4	16.7
Clerical	36.5	9.7	9.9	43.9
Sales, service	58.8	5.4	22.4	13.3
Supervisors	62.2	6.0	21.2	10.6
Skilled workers	67.4	3.4	18.8	10.5
Semi-skilled workers	66.1	2.9	18.2	12.9
Unskilled workers	64.5	3.8	21.6	10.0

Note: See text for definition of crowding index.

A later version of this paper will examine the overcrowding index more systematically, but for occupational feminisation, a basic regression function was applied to each occupational category. The results indicate a strong positive correlation between the extent of feminisation of production worker employment, as measured by the percent of manual occupations taken by women, and feminisation of higher-level, white-collar categories (Table 41).

Larger firms had proportionately fewer women in higher-level occupations, and foreign firms tended to employ relatively few women in managerial, administrative positions. Among shop-floor workers, the relationships were somewhat different, with, for example, the female share of supervisors and "foremen" rising with size of workforce, except in the very largest category.

Table 41: Female percent share of occupational groups, Philippines, 1990

(OLS regression coefficients)

Variables	Managerial, Admin.	Prof., Technic.	Clerical	Sales, Service
Constant	28.673***	54.227***	85.486***	31.479***
Industry				
Textiles	6.024	-7.317	-0.0004	5.021
Wood prod.	14.964***	-10.869	5.132	2.662
Paper prod.	5.520	-9.373	0.277	-5.888
Chemicals	5.929	-3.228	-0.923	-6.179
Non-met.min.	1.307	-18.588***	3.445	-11.114*
Basic met.	-4.824	-19.254***	1.291	-4.246
Fabric.met.	-3.672	-22.583***	2.301	-6.890
Electronics	-5.673	-32.143***	6.542	-4.362
Other manuf.	11.152**	-4.783	5.014	-0.591
Construction	1.785	-36.177***	-7.933*	-12.236*
Trade	12.191***	-9.804*	2.465	8.436*
Size				
21-50	-5.068*	-2.740	-11.766***	-4.907
51-100	-4.475	-4.945	-9.261***	-8.281
101-250	-7.574***	-9.528*	-15.991***	-10.389**
251-500	-8.461**	-12.024**	-17.115***	-4.196
501-1000	-11.183**	-14.035**	-17.613***	-9.332
1001+	-14.097***	-4.055	-27.868***	-9.851
Foreign	-6.318**	-1.601	-4.979**	-6.188*
% exported	-0.026	-0.031	-0.042	-0.056
% female of prod.wkrs.	0.254***	0.270***	0.188**	0.221***
	$R^2 = 0.12$	$R^2 = 0.17$	$R^2 = 0.10$	$R^2 = 0.09$
	$F = 7.72$	$F = 6.89$	$F = 5.22$	$F = 3.40$

Table 41: Female percent share of occupational groups, The Philippines, 1990

(OLS regression coefficients)

Variables	Supervisors	Skilled	Semi-skilled	Unskilled
Constant	2.603	9.198***	22.459***	28.234***
Industry				
Textiles	1.496	40.955***	22.741***	15.021***
Wood prod.	-7.446*	-6.336*	-22.605***	-16.253***
Paper prod.	3.632	3.368	-3.618	-8.284*
Chemicals	8.210*	0.938	-17.347***	-18.649***
Non-met.min.	-6.025	-0.938	-12.013**	-21.727***
Fabric.met.	-5.663	-9.445***	-24.197***	-23.347***
Electronics	0.447	13.654***	-5.280	-3.839
Other manuf.	-2.868	7.087*	-2.784	-0.194
Construction	-5.889	-7.331**	-25.863***	-30.751***
Trade	14.915***	-1.337	-13.431**	-25.354***
Size				
21-50	4.023	1.581	5.998	3.468
51-100	2.804	-0.537	5.599	4.746
101-250	7.047*	-1.969	1.353	3.478
251-500	7.021*	2.645	0.200	-0.623
501-1000	11.088**	-2.784	4.215	8.895*
1001+	1.931	6.613*	-5.701	1.658
Foreign	2.434	1.894	5.974*	-1.947
% exported	0.030	0.214***	0.206***	0.086**
% female of prod.wrkrs	0.500***	-	-	-
	$R^2 = 0.36$	$R^2 = 0.45$	$R^2 = 0.33$	$R^2 = 0.26$
	F = 23.46	F = 42.36	F = 15.07	F = 11.44

Table 42: **Change in female percent share of occupational groups, Philippines, 1990**

(OLS regression coefficients)

Variables	Managerial, Admin.	Professional, technical	Clerical	Sales, Service
Constant	1.481	6.737**	19.103***	4.809**
Industry				
Textiles	4.477***	-2.604	0.982	-3.651
Wood prod.	3.701**	-4.729	1.830	-1.975
Paper prod.	2.241	-6.416**	0.100	-2.966
Chemicals	2.698	-3.175	1.111	-4.475
Non-met.min.	0.175	-5.458*	1.590	-3.440
Basic met.	0.068	-1.765	2.916	-0.331
Fabric.met.	-0.234	-4.648*	2.686	-2.165
Electronics	0.421	-6.504**	1.637	-3.900
Other manuf.	2.261	1.798	3.293	-1.016
Construction	2.399	-8.858***	-2.332	-3.103
Trade	2.649*	-2.730	0.682	1.135
Size				
21-50	-0.168	3.718	-3.978**	-0.619
51-100	-0.581	5.888**	-2.543	-0.190
101-250	-0.108	1.963	-4.971***	-3.397
251-500	-0.696	1.594	-4.839**	0.727
501-1000	-1.022	1.179	-4.815**	-3.869
1001+	-1.360	6.925**	-6.350**	-3.382
Foreign	1.431	-0.460	-1.780	-1.566
% exported	0.004	-0.007	-0.012	0.038
% emp.change	-0.007**	-0.024**	0.005	0.021*
% female of occ.in 1988	-0.093***	-0.113***	-0.198***	-0.141***
	$R^2 = 0.07$	$R^2 = 0.11$	$R^2 = 0.15$	$R^2 = 0.12$
	$F = 3.87$	$F = 3.69$	$F = 7.96$	$F = 4.50$

Table 42: Change in female percent share of occupational groups, Philippines, 1990

(OLS regression coefficients)

Variables	Supervisors	Skilled	Semi-skilled	Unskilled
Constant	3.353*	1.734	0.771	5.643**
Industry				
Textiles	0.903	6.971***	2.762	1.121
Wood prod.	-1.697	-2.286	-4.839*	-7.056**
Paper prod.	0.117	1.082	-1.611	3.121
Chemicals	2.539	1.350	0.952	-1.142
Non-met.min.	-0.901	-1.396	-1.516	-5.595*
Basic met.	-0.868	-0.906	-3.028	-8.039**
Fabric. met.	-2.011	-0.921	-2.621	-4.065
Electronics	1.448	3.235*	1.889	-3.000
Other manuf.	0.897	1.144	-4.262	2.756
Construction	-1.034	-0.142	-3.241	-6.358**
Trade	1.086	-0.235	-2.385	-7.099***
Size				
21-50	-2.477	-1.218	4.167**	0.260
51-100	-2.235	-0.666	1.974	3.328
101-250	-2.069	-0.817	1.819	-1.014
251-500	-2.422	-0.162	0.665	-0.606
501-1000	-0.839	-0.842	0.098	3.128
1001+	-0.868	-1.470	-2.702	0.390
Foreign	-0.761	-1.405	-0.304	-1.727
% exported	0.013	0.039***	0.048**	0.006
% emp.change	0.004	0.003	0.059***	0.031*
% female of occ. in 1988	-0.075***	-0.129***	-0.109***	-0.177***
	$R^2 = 0.06$	$R^2 = 0.11$	$R^2 = 0.14$	$R^2 = 0.14$
	$F = 2.35$	$F = 5.46$	$F = 3.69$	$F = 4.18$

7. Segregation by wages

What then of the issue of wages in the process of stratification and discrimination? We cannot treat all aspects of this, bearing in mind that there are supply-side (human capital) explanations for wage differentials that have been extensively examined over the past two decades. The following tries to highlight basic demand-side issues linked to the pattern of women's economic disadvantage in the industrial labour market. The statistical associations relate primarily to the hypothesis that women's earnings are depressed by women's "overcrowding" into a narrow range of jobs.[17]

Studies elsewhere have found an inverse relationship between feminisation of employment and the earnings of both men and women.[18] A priori, however, there is no reason to presume that occupational or industrial crowding, or segregation, would be linked to overall earnings. Indeed, in the USA, one study reported that once industry differences were taken into account, then being employed in a female-dominated occupation only lowered earnings by a small amount.[19] The crucial point is that if there is a crowding effect on wages, then a policy of "comparable worth" would be justified.

The following sections will cover (a) average earnings, (b) average wages of men and women separately, (c) average wages of occupational groups, and (d) gender-related wage differentials. In each case, a great deal more statistical work on the data could, should and, one hopes, will be done.

a. Average earnings

It is fairly clear that in Malaysia, beyond a minimal level, the larger the female share of total employment the lower the overall <u>average</u> wage of regular workers (Table 43). One might expect that this reflected both lower wage rates paid to women and a tendency for women to be in the lower-wage jobs, issues to which we will turn shortly. However, the level of <u>average earnings</u> varied enormously in firms with different female shares of

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[17] Edgeworth, 1992, op.cit; Bergmann, 1974, op.cit.

[18] See, e.g., M. Tienda, S.A. Smith and V. Ortiz, "Industrial restructuring, gender segregation and sex differences in earnings", <u>American Sociological Review</u>, Vol. 52, No. 2, April, 1987; F. Bettio, "Secular decrease of sex-linked wage differentials: A case of non-union competition", <u>Economia e Lavoro</u>, Vol. 19, No. 3, July-Sept., 1985; F.D. Blau and A.H. Beller, "Trends in earnings' differentials by gender, 1971-81", <u>Industrial and Labour Relations Review</u>, Vol. 41, No. 4, July, 1988; for a dissenting view, see OECD, "Women's activity, employment and earnings: A review of recent developments", in <u>Employment Outlook 1988</u> (Paris, OECD, 1988).

[19] G. Johnson and G. Solon, "Estimates of the direct effects of comparable worth policy", <u>American Economic Review</u>, Vol. 76, No. 5, 1986, pp.1117-25.

employment. Table 44 is reproduced to stress that many of the plants in which women comprised the bulk of the workforce were paying very low wages and benefits, barely sufficient to meet subsistence needs.

Table 43: Average monthly wages and earnings, by female share of employment, Malaysia, 1988
(Malaysian ringgit)
(Mean wage/earnings in each female-share category)

Percent Female

	0	0.1-5	5.1-10	10.1-25	25.1-50	50.1-75	75.+
Mean Wage	442.8	469.6	505.3	474.5	388.3	327.1	308.1
Mean Earnings	511.6	560.8	616.8	557.3	457.4	386.5	370.9

Table 44: Distribution of average earnings,by percent female, Malaysia, 1988
(Malayasian ringgit)
(Percent distribution in each female-share category)

Average monthly earnings

% female	-300	301-400	401-500	501-600	601-800	801+
0	20.4	20.4	16.8	13.2	20.5	8.4
0.1-10	5.6	9.7	23.3	23.1	22.8	15.5
10.01-25	8.0	15.1	22.4	17.4	24.8	12.1
25.01-50	19.6	25.6	23.9	12.8	12.1	6.0
50.01-75	30.3	31.1	20.0	11.0	5.5	2.1
75.01+	28.9	29.9	27.2	8.7	4.9	0.3

To examine the association between women's share of total employment and average earnings in the firm, an earnings function was estimated in which the dependent variable was the logarithm of average monthly earnings of regular workers, including wages and bonuses, or the logarithm of average hourly wages. In an attempt to isolate direct links between the female share of employment and earnings, various control variables were included that might otherwise be adduced as explanations of any statistical correlation. The resultant function was as follows:

$$\text{Log. W} = \alpha + \beta_1 \xi_i I + \beta_2 \xi_j E + \beta_3 \xi_k O + \beta_4 X + \beta_5 C + \beta_6 U + \beta_7 SS$$
$$+ \beta_8 CNT + \beta_9 dE + \beta_{10} LC + \beta_{11} CU + \beta_{12} IU + \beta_{13} F + e$$

where the independent variables were as defined for equation 1, with the addition of CNT, the percent of employment consisting of contract labour, dE being employment change over the past three years (1985-88) in the case of Malaysia and past two years (1988-90) in the Philippines, LC being the share of labour costs in total production costs (a proxy for labour intensiveness), CU and IU being binaries for presence of company or industrial unions respectively, and F being the percent of employment consisting of women.

The results, presented in Table 45, show that even controlling for skill composition, industry, size of firm, ownership, extent of casualisation, past employment growth and unionisation, establishments with high shares of women workers were relatively low paying. The causal relationship may be unclear, but the association is disquietening.

Comparable functions were estimated for the Philippines (Table 46). Although there were differences with respect to some of the other variables, there was a similarly strong inverse relationship between feminisation of employment and average earnings. Interestingly, if we omit the proxy for "labour intensiveness", the inverse relationship emerged more strongly.

Table 45: Average earnings in establishments, Malaysia, 1988

(OLS regression results)

Variable	Log.earnings		Log.hourly wage	
	Coeff.	t-ratio	Coeff.	t-ratio
Intercept	6.034	204.60	2.272	77.727
Emp.size				
21-50	0.142	5.668***	0.005	0.200
51-100	0.161	5.974***	-0.017	-0.640
101-250	0.175	6.133***	-0.047	-0.027*
251-500	0.247	6.205***	-0.001	-0.027
501-1000	0.248	4.558***	-0.041	-0.753
1001+	0.207	3.195***	0.031	0.487
Industry				
Textiles	0.193	5.232***	0.069	1.897*
Wood prod.	-0.023	-0.715	0.013	0.403
Paper prod.	0.217	5.836***	0.110	2.993***
Chemicals	0.076	2.758***	0.091	3.340***
Electronics	0.199	3.037***	0.123	1.896*
Non-met.min.	0.060	1.572	0.124	3.296***
Basic metals	0.225	4.469***	0.072	1.445
Fabric.met.	0.186	7.110***	0.144	5.544***
Other manuf.	0.033	0.513	0.034	0.545
% labour costs	0.001	1.414	0.001	1.097
% output exported	0.000	0.048	-0.001	-2.065**
Foreign owned	0.168	6.333***	0.166	6.314***
% emp.growth (1985-88)	-0.0001	-1.699*	-0.0001	-2.801***
% female employ.	-0.007	-17.970***	-0.005	-13.139***
% unskilled	-0.001	-3.425***	-0.004	-10.963***
% semi-skilled	-0.001	-3.112***	-0.003	-8.441***
% casual labour	0.004	4.313***	0.004	3.926***
% contract labour	0.002	5.152***	0.004	8.769***
Company union	0.187	4.702***	0.090	2.279**
Industrial union	0.197	8.351***	0.146	6.265***

$$R^2 = 0.27 \qquad\qquad R^2 = 0.25$$
$$F = 36.37 \qquad\qquad F = 32.31$$

Table 46: Average earnings in establishments, Philippines, 1990

(OLS regression results)

Variable	Log.earnings	
	Coeff.	t-ratio
Intercept	3.468	146.08
Emp.size		
21-50	0.041	2.653***
51-100	0.062	3.333***
101-250	0.067	3.747***
251-500	0.085	3.736***
501-1000	0.052	1.859*
1001+	0.086	2.547***
Industry		
Textiles	-0.030	-1.344
Wood prod.	-0.014	-0.541
Paper prod.	0.045	1.849*
Chemicals	0.133	4.922***
Electronics	0.051	1.474
Non-met.min.	-0.005	-0.206
Basic metals	0.016	0.560
Fabric.met.	0.007	0.306
Other manuf.	0.008	0.312
Trade	0.049	2.293**
Construction	0.099	3.699***
% labour costs	-0.001	-2.335**
% output exported	-0.0003	-0.178
Foreign owned	0.086	5.947***
% emp.growth (1988-90)	-0.00004	-0.081
% female employ.	-0.0006	-2.528**
% unskilled	-0.001	-5.603***
% semi-skilled	-0.001	-5.095***
% casual labour	0.0004	1.035
% contract labour	0.001	3.993***
Company union	0.012	0.687
Industrial union	0.002	0.141

$R^2 = 0.24$
$F = 9.64$

b. Average wages by sex

For the Philippines, corresponding functions for male and female wages were estimated separately. First, it may be of interest to observe the correlations between overall feminisation of employment and average male and female wages (Table 47). The figures should be interpreted with caution, since in some cases the average wages for men and women are not based on quite the same number of firms because there were either no men or no women in the occupational group. In general, average wages seemed higher in firms with less segregated workforces, i.e., that were not either mainly male or mainly female.

As for the male and female wage functions, among the main points are that the industrial sectors in which men earned relatively high (or low) wages were also those in which women earned relatively high (or low) wages compared to other women workers. Both men and women earned relatively high wages in foreign-owned firms. However, the higher the women's share of total employment the lower women's wages, controlling for other influences; for men, the coefficient was not statistically significant, although it was also negative.

Table 47: <u>Average monthly wage of occupational group, by sex,</u>
<u>by percent female of total employment,</u>
<u>Philippines, 1990</u>
(in pesos)

Percent female

	0	.01<10	10< 25	25< 50	50+	Total	c.v.
Managerial/Admin.							
Male	7015	8436	9250	8568	8608	8703	1.54
Female	–	7144	7675	7828	7585	7585	1.51
Profess./Technic.							
Male	5121	5227	5489	5137	4661	5170	2.02
Female	–	4568	5277	4785	4300	4732	2.15
Clerical workers							
Male	3737	3404	3711	3449	3356	3493	2.77
Female	–	*	3225	3313	3196	3059	2.85
Sales/service							
Male	3805	3603	3696	3339	3000	3417	2.21
Female	–	3207	3611	3247	2877	3173	2.37
Supervisors							
Male	3699	4287	4543	4184	3869	4230	2.18
Female	–	5550	5079	4280	3763	4328	2.17
Skilled operatives							
Male	2276	3064	3067	2757	2705	2897	2.69
Female	–	3324	3070	2796	2654	2803	2.53
Semi-skilled op.							
Male	2571	2883	2717	2502	2520	2671	1.55
Female	–	2585	2805	2562	2285	2498	2.96
Unskilled op.							
Male	2146	2479	2604	2445	2401	2484	3.00
Female	–	2702	2902	2498	2263	2464	2.82

Note: c.v. is coefficient of variance for total group.
     * indicates five or fewer observations.

Table 48: Average wages of men and women, Philippines, 1990

	Log.wage of men		Log.wage of women	
Variable	Coeff.	t-ratio	Coeff.	t-ratio
Constant	3.463	140.830	3.499	149.132
Emp.size				
21-50	0.045	2.782***	0.061	3.882***
51-100	0.068	3.481***	0.071	3.826***
101-250	0.066	3.530***	0.081	4.577***
251-500	0.092	3.964***	0.107	4.846***
501-1000	0.069	2.389**	0.066	2.401**
1001+	0.114	3.376***	0.093	2.873***
Industry				
Textiles	-0.035	-1.529	-0.039	-1.802*
Wood prod.	-0.022	-0.832	-0.035	-1.360
Paper prod.	0.034	1.403	0.006	0.266
Chemicals	0.124	4.622***	0.111	4.348***
Electronics	0.080	2.328**	0.016	0.483
Non-met.min.	0.003	0.127	-0.015	-0.643
Basic met.	0.019	0.638	0.010	0.351
Fabric.met.	0.012	0.513	0.007	0.314
Other manuf.	0.002	0.089	0.007	0.261
Trade	0.054	2.497**	0.059	2.885***
Construction	0.121	2.540***	0.056	2.196**
% lab. costs	-0.0008	-3.265***	-0.0005	-2.325**
% exported	0.0002	0.923	0.0002	1.023
Foreign	0.0892	6.222***	0.0756	5.527***
% emp.growth				
(1988-90)	-0.00002	-0.573	0.00000	0.033
%female emp.	-0.00006	-0.231	-0.0017	-7.133***
% unskilled	-0.0013	-5.846***	-0.0008	-3.712***
% semi-skill.	-0.0012	-4.217***	-0.0008	-2.954***
% casual	0.0005	1.506	0.0003	0.935
% contract	0.0011	4.308***	0.0002	0.715
Company union	0.0070	0.399	0.0133	0.801
Indust.union	0.0052	0.379	0.0147	1.121

$R^2 = 0.26$
$F = 10.11$
$N = 842$

$R^2 = 0.27$
$F = 10.72$
$N = 842$

Table 49: Average wages of skilled workers, by sex,
Philippines, 1990

(OLS regressions)

	MALE		FEMALE	
	log.wage	log.wage	log.wage	log.wage
Variable	Coeff.	Coeff.	Coeff.	Coeff.
Constant	3.3899***	3.3980***	3.3636***	3.3674***
Industry				
Textiles	-0.0224	-0.0285	-0.0241	-0.0292
Wood prod.	-0.0415*	-0.0298	-0.0505	-0.0352
Paper prod.	0.0396*	0.0374*	0.0209	0.0163
Chemicals	0.0727***	0.0670***	0.0617*	0.0443
Electronics	0.0038	0.0033	-0.0165	-0.0056
Non-met.min.	-0.0249	-0.0227	-0.0102	-0.0072
Basic met.	0.0129	0.0174	0.0559	0.0599
Fabric.met.	-0.0037	0.0050	0.0148	0.0245
Other manuf.	-0.0013	-0.0014	-0.0138	-0.0128
Construction	0.0244	0.0389	0.0379	0.0552
Trade	0.0064	0.0162	0.0431	0.0807**
Emp.size				
21-50	0.0560***	0.0532***	0.0646**	0.0538*
51-100	0.0835***	0.0789***	0.1113***	0.1115***
101-250	0.0978***	0.0979***	0.1041***	0.1006***
251-500	0.1236***	0.1211***	0.1241***	0.1234***
501-1000	0.1402***	0.1297***	0.1710***	0.1642***
1001+	0.1772***	0.1729***	0.1809***	0.1747***
% lab.costs	-	-0.0006***	-	-0.0003
% exported	-0.0002	-0.0002	-0.0002	-0.0002
Foreign	0.0595***	0.0546***	0.0244	0.0181
% emp.growth	0.00002	0.00002	0.00002	0.00001
% female	-0.0010***	-0.0007***	-0.0006*	-0.0003
% unskilled	-0.00001	-0.00007	0.0011***	0.0011***
% semi-skill	-0.0004	-0.0003	-0.0007*	-0.0007*
% casual	-0.0003	-0.0001	-0.0001	-0.00003
% contract	-0.0006**	-0.0007**	-1.0018***	-0.0020***
Company union	0.0030	0.0103	0.0163	0.0177
Indust.union	0.0101	0.0101	0.0128	0.0089
	$R^2 = 0.23$	$R^2 = 0.23$	$R^2 = 0.31$	$R^2 = 0.34$
	F = 8.45	F = 7.77	F = 4.95	F = 5.01
	N = 799	N = 756	N = 318	N = 297

c. <u>Sex wage differentials</u>

The next stage in the discrimination or disadvantage process is the wage differential between men and women. Wage discrimination may take many complementary <u>or</u> compensating forms -- different starting wages, smaller or fewer increments, fewer fringe payments, and so on. Moreover, average wages are not ideal proxies for identifying discrimination, since they combine supply-side behavioural factors as well as demand-side "discriminatory" influences.[20] So, differentials in average wages are slightly ambiguous indices of discrimination. With that proviso, basic patterns can be discerned, although one might quibble about the exact meaning of the data.

First, in both Malaysia and the Philippines, in a small minority of firms women's average wages were actually higher than men's for broadly equivalent skill levels. Second, the distribution of firms by the ratio of male to female wages was far more bunched around equality in the Philippines than in Malaysia.

Third, in Malaysia, the wage ratio for skilled workers indicated that in many firms men received over 50% more than female colleagues (Table 50). The exception was the electronics industry, where in one in every five firms women received more than men.[21] In the Philippines, in that sector, wage equality for skilled workers seemed remarkably close (Table 50).

For semi-skilled workers, more firms in both countries had women's average wages higher than men's, but again the differentials were larger in Malaysia (Table 51). Only for unskilled workers did more firms in Malaysia seem to pay higher wages for women than for men (Table 52). A possible reason is that more firms there <u>classified</u> more women's jobs as unskilled. Even so, the proportion of firms paying much higher wages to men was much higher in Malaysia.

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[20] We did not deal with this adequately in the final design of the PLFS, having had to reduce the amount of detail on certain issues because of the demand to focus on other topics at the time, notably the impact or otherwise of labour regulations on employment. In other labour flexibility surveys the initial recruitment wage <u>and</u> the current average wage for each gender-skill category are included. In the second draft of this paper, an attempt will be made to analyse this post-entry discrimination factor.

[21] Empirically, there is a slight complication, in that women <u>might</u> "self-select" a narrow range of jobs. In estimating individual earnings functions, this may be corrected. E. Sorensen, "Measuring the pay disparity between typically female occupations and other jobs: A bivariate selectivity approach", <u>Industrial and Labor Relations Review</u>, Vol. 42, No. 4, July 1989, pp.624-39. It is sometimes argued that men and women prefer different job characteristics. M.R. Killingsworth, "Heterogeneous preferences, compensating wage differentials and comparable worth", <u>Quarterly Journal of Economics</u>, Vol. 102, No. 4, 1987, pp.727-42.

Table 50: Ratio of male to female wages of skilled workers, by industry, Malaysia, 1988 and Philippines 1990.

Industry	MALAYSIA — Ratio of Male to Female Wages					PHILIPPINES — Ratio of Male to Female Wages				
	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5
Food,etc	7.2	23.7	44.3	15.5	9.3	6.1	75.8	15.2	-	3.0
Textiles, etc.	11.0	28.0	46.3	12.2	2.4	11.8	60.5	22.7	2.5	2.5
Wood products	8.2	24.5	44.9	10.2	12.2	7.7	65.4	23.1	-	3.8
Paper products	2.4	20.5	33.7	25.3	18.1	14.0	53.5	23.3	7.0	2.3
Chemicals etc	7.7	13.3	41.3	22.4	15.4	20.5	59.0	17.9	2.6	-
Non-metal min.	4.8	28.6	38.1	19.0	9.5	(16.7)	(66.7)	(16.7)	-	-
Basic metals	-	18.7	37.5	18.7	25.0	-	(60.0)	(40.0)	-	-
Fabric metals	6.4	28.2	37.1	16.9	11.3	-	75.0	25.0	-	-
Electronics	20.6	41.2	29.4	2.9	5.9	9.1	77.3	13.6	-	-
Other manuf.	5.6	55.6	33.3	5.6	-	8.3	83.3	8.3	-	-
Construction	n/a	n/a	n/a	n/a	n/a	-	(100.0)	-	-	-
Trade	n/a	n/a	n/a	n/a	n/a	21.7	43.5	21.7	8.7	4.3

Table 51: Ratio of male to female wages of semi-skilled workers, by industry, Malaysia, 1988 and Philippines 1990.

Industry	MALAYSIA — Ratio of Male to Female Wages					PHILIPPINES — Ratio of Male to Female Wages				
	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5
Food,etc	8.7	35.6	34.8	14.8	6.1	18.5	66.7	14.8	-	-
Textiles, etc.	11.1	27.8	46.3	14.8	-	6.0	80.0	10.0	2.0	2.0
Wood products	4.9	31.1	32.8	21.3	9.8	14.3	78.6	7.1	-	-
Paper products	8.2	20.5	53.4	13.7	4.1	31.3	56.3	6.3	6.3	-
Chemicals etc	9.7	26.6	38.7	18.5	6.4	21.1	63.2	15.8	-	-
Non-metal min.	-	34.6	34.6	30.8	-	-	-	-	-	-
Basic metals	9.1	27.3	45.4	18.2	-	-	(100.0)	-	-	-
Fabric metals	11.5	27.9	45.2	12.5	2.9	-	*	-	-	-
Electronics	25.0	33.3	41.7	-	-	(28.6)	(71.4)	-	-	-
Other manuf.	13.3	53.3	26.7	-	6.7	25.0	41.7	33.3	-	-
Construction	n/a	n/a	n/a	n/a	n/a	-	-	-	-	-
Trade	n/a	n/a	n/a	n/a	n/a	50.0	50.0	-	-	-

Table 52: Ratio of male to female wages of unskilled workers, by industry, Malaysia, 1988 and Philippines 1990.
(per cent distribution of sector)

Industry	MALAYSIA Ratio of Male to Female Wages					PHILIPPINES Ratio of Male to Female Wages				
	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5
Food,etc	11.0	27.7	37.4	16.1	7.7	11.1	72.2	13.9	2.8	-
Textiles, etc.	4.3	27.5	44.9	11.6	11.6	6.8	81.4	10.2	1.7	-
Wood products	3.7	21.3	50.0	12.8	12.2	7.1	85.7	7.1	-	-
Paper products	9.9	25.7	42.6	14.8	6.9	-	75.0	16.7	8.3	-
Chemicals etc	13.1	23.2	43.4	11.2	9.0	14.3	52.4	28.6	-	4.8
Non-metal min.	9.4	32.8	39.1	10.9	7.8	*	*	*	-	-
Basic metals	21.2	27.3	42.4	3.0	6.1	-	*	-	-	-
Fabric metals	11.4	32.1	40.5	10.5	5.5	-	(100.0)	-	-	-
Electronics	13.2	36.8	18.4	21.0	10.5	10.0	70.0	10.0	10.0	-
Other manuf.	3.7	55.6	33.3	3.7	3.7	7.7	69.2	7.7	7.7	7.7
Construction	n/a	n/a	n/a	n/a	n/a	-	*	-	-	-
Trade	n/a	n/a	n/a	n/a	n/a	*	75.0	25.0	-	-

Table 53: Ratio of male to female wages by skill, by employment size, Malaysia, 1988 and Philippines 1990.
(per cent distribution within employment size category)

MALAYSIA — Ratio of Male to Female Wages

Employment	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5
Skilled Workers					
1-20	5.6	31.5	25.9	18.5	18.5
21-50	5.2	19.1	34.8	19.1	21.7
51-100	3.3	17.6	44.4	20.3	14.4
101-250	11.0	21.4	42.9	17.0	7.7
251-500	5.0	28.7	45.0	17.5	3.7
501+	14.4	41.0	36.1	6.0	2.4
Semi-skilled workers					
1-20	11.1	31.5	37.0	14.8	5.6
21-50	5.1	19.8	46.3	22.1	6.6
51-100	8.8	27.7	40.9	16.1	6.6
101-250	11.6	33.5	35.5	16.1	3.2
251-500	9.5	35.1	41.9	10.8	2.7
501+	12.8	41.0	43.6	2.6	-
Unskilled workers					
1-20	8.6	23.4	39.1	16.4	12.2
21-50	6.3	20.8	47.2	12.9	12.9
51-100	10.9	28.2	37.5	15.7	15.7
101-250	11.2	27.3	43.0	11.2	7.3
251-500	9.2	36.1	40.0	10.8	3.8
501+	13.2	39.5	37.7	5.3	4.4

PHILIPPINES — Ratio of Male to Female Wages

Employment	Below 1	1	1.001-1.250	1.251-1.500	Over 1.5
Skilled Workers					
1-20	4.5	68.2	22.7	4.5	-
21-50	7.9	58.7	27.0	4.8	1.6
51-100	18.5	57.4	20.4	-	3.7
101-250	13.8	61.7	20.2	2.1	2.1
251-500	8.8	71.9	14.0	3.5	1.8
501+	12.5	67.2	17.2	3.6	2.8
Semi-skilled workers					
1-20	(12.5)	(75.0)	-	(12.5)	-
21-50	31.6	47.4	21.1	-	-
51-100	33.3	44.4	18.5	3.7	-
101-250	7.7	74.4	17.9	-	-
251-500	6.9	93.1	-	-	-
501+	12.8	76.9	7.7	-	2.6
Unskilled workers					
1-20	-	(83.3)	-	(16.7)	-
21-50	3.3	80.0	10.0	6.7	-
51-100	6.7	56.7	33.3	-	3.3
101-250	2.5	70.0	27.5	-	-
251-500	10.3	79.5	2.6	7.7-	-

In both countries, gender-based wage differentials seemed greater in small firms, as seen for skilled, semi-skilled and unskilled workers (Table 53). For all occupational groups, there was a fairly linear relation between firm size and level of average wage, for both men and women, as illustrated for the Philippines in Table 54. Indeed this table suggests that much of the differential wage between men and women could be explained by firm size, a point to which we will return.

The higher the occupational level the higher the probability that men were earning higher wages than women.[22] This is brought out clearly for the Philippines in Table 55. And in both countries, for unskilled workers, the higher the share of employment taken by women the lower women's relative wage (Table 56). There was no apparent correlation for higher skill levels of job. The direct correlations also suggest that in Malaysia, although not in the Philippines, the more women relative to men in a plant the lower female and male wages.[23]

Table 54: **Average monthly wage of occupational groups, by sex, by establishment size, Philippines, 1990**
(monthly, in pesos)

	Skilled			Unskilled			Prof./Tech.		
	Male	Female	M/F	Male	Female	M/F	Male	Female	M/F
Emp.size									
1-20	2274	2117	1.07	2110	1603	1.32	3786	3863	0.98
21-50	2733	2526	1.08	2242	2127	1.05	4883	4085	1.20
51-100	2897	2860	1.01	2497	2348	1.06	5135	4493	1.14
101-250	3111	2786	1.12	2646	2556	1.04	5380	4907	1.10
251-500	3117	2846	1.10	2627	2600	1.01	5260	4974	1.06
501-1000	3289	3241	1.01	2610	2548	1.02	5423	5270	1.03
1001 +	3571	3465	1.03	2937	3106	0.95	5745	5251	1.09
TOTAL	2897	2803	1.03	2484	2464	1.01	5171	4732	1.09

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[22] Others have also reported an absence of gender-related wage differentials in the Malaysian electronics industry. For instance, the Ministry of Labour's 1983 Occupational Wage Survey reported that the average daily wage rates of female material handlers was M$13.3, whereas the male average was only M$10.5.

[23] In industrialised countries, the tendency for earnings differentials to increase with the level of the occupational hierarchy has been widely, though not universally, observed. Thus it has been observed in France, where it has been attributed to the effect of minimum wage legislation, but not in (West) Germany, where there is no minimum wage. D. Depardieu and J.F. Payeu, "Disparites des salaires dans l'industrie en France et en Allemagne: Des ressemblances frappantes", Economie et Statistiques, No. 188, May 1986.

Table 55: Gender-based wage ratios, by occupational group,
The Philippines, 1990

(percent distribution for each occupational group)

Wage Ratio

	Below 1	1	Above 1
Management/Admin.	11.7	41.0	47.3
Prof./Technical	15.9	50.7	33.4
Clerical	20.3	54.4	25.3
Sales, service	19.7	48.9	31.3
Supervisors	15.8	54.0	30.2
Skilled manual	11.9	63.6	24.6
Semi-skilled	16.1	68.5	15.5
Unskilled	7.6	75.3	17.1

Table 56: Gender-based wage ratio for semi-skilled workers,
by percent female employment
Malaysia, 1988, and the Philippines, 1990

(percent distribution of establishments)
Ratio of Male to Female Wages

% female	Below 1	1	1.001-1.25	1.251-1.50	Over 1.5
		MALAYSIA			
0.01-10	3.8	46.1	26.9	15.4	7.7
10.01-25	13.1	29.3	34.3	21.2	2.0
25.01-50	8.2	27.2	43.1	15.9	5.6
50.01-75	7.6	28.6	44.3	14.0	5.4
75.01+	15.1	35.8	35.8	11.3	1.9
		PHILIPPINES			
0.01-10	-	(77.8)	(22.2)	-	-
10.01-25	26.7	56.7	13.3	-	3.3
25.01-50	17.1	65.8	14.5	2.6	-
50.01-75	11.1	77.8	11.1	-	-
75.01+	11.5	76.9	7.7	-	3.8

Table 57: Gender-based wage ratio for unskilled workers,
          by percent female employment,
          Malaysia, 1988, and Philippines, 1990

(percent distribution of establishments)

Ratio of Male to Female Wages

	Below 1	1	1.001-1.25	1.251-1.50	Over 1.5
MALAYSIA					
% female					
0.01-10	16.9	37.9	29.8	9.7	5.6
10.01-25	14.9	26.9	36.9	11.6	9.7
25.01-50	7.2	24.6	48.9	11.5	7.7
50.01-75	8.1	26.1	42.6	15.9	7.2
75.01+	6.0	32.1	35.7	13.1	13.1
PHILIPPINES					
0.01-10	8.3	83.3	8.3	-	-
10.01-25	20.7	58.6	20.7	-	-
25.01-50	4.8	74.7	15.7	3.6	1.2
50.01-75	2.5	82.5	15.0	-	-
75.01+	8.8	79.4	2.9	5.9	2.9

Women's relative wages were apparently lower in Malaysian-owned firms than in multinationals, for all skill levels (Table 58). The final bivariate relation that deserves to be stressed is that in Malaysia the presence of a trades union was associated with higher relative wages of women, among skilled, semi-skilled and unskilled categories (Table 59).

For Malaysia, we can also say a little about changes in relative wages. Controlling for the gender composition of employment, in nearly 27% of all establishments wages of female skilled workers had risen in the previous year, whereas wages of male skilled workers had risen in fewer than 22% of all firms. Moreover, female wages were more likely to have risen, regardless of the change in total employment over the previous two years (Table 60).

Table 58: Male-female wage ratio, by skill, by main ownership, Malaysia, 1988

(percent distribution within ownership group)

Ratio of male to female wages

	0.5-0.999	1.00	1.001-1.25	1.251-1.5	1.501+	N
SKILLED						
Foreign	13.2	29.8	35.1	17.2	4.6	151
Chinese Malaysian	3.0	19.6	41.4	19.0	16.9	331
Other Malaysian	10.9	28.3	41.3	13.0	6.5	184
SEMI-SKILLED						
Foreign	10.4	38.3	33.9	9.6	7.8	115
Chinese Malaysian	6.0	22.2	45.3	21.0	5.4	333
Other Malaysian	15.1	39.7	35.6	8.9	0.7	146
UNSKILLED						
Foreign	11.1	32.6	36.0	12.3	8.0	261
Chinese Malaysian	6.4	22.3	46.1	14.6	10.5	744
Other Malaysian	15.4	34.4	36.5	8.6	5.1	395

Table 59: Male-female wage ratio, by skill and unionisation, Malaysia, 1988

(percent distribution within unionised/non-unionised groups)

Ratio of Male to Female Wages

	Below 1	1	1.001-1.50	1.501+	N
Skilled					
Unionised	10.3	30.2	54.7	4.7	232
Non-union.	6.0	22.4	54.7	16.9	433
Semi-skilled					
Unionised	16.4	38.6	43.9	1.2	171
Non-union.	6.4	26.0	60.0	7.5	423
Unskilled					
Unionised	17.4	37.1	42.5	3.1	426
Non-union.	6.2	23.8	57.5	12.5	972

Table 60: Wage change of skilled workers, by sex,
by percent change in employment, Malaysia, 1987-88

(percent distribution within employment-change category)

Change in wage

% emp.change	Fell	No Change	Rose 0.1-10	Rose 10.01+
Fell: Over 25%				
Male	3.2	79.6	10.2	7.0
Female	1.1	72.4	16.1	10.3
10.1-25				
Male	1.3	82.6	9.7	6.3
Female	0.9	80.7	12.8	5.5
0.1-10				
Male	0.5	82.6	10.1	6.8
Female	1.3	74.4	12.8	11.5
No change				
Male	1.4	77.1	13.8	7.6
Female	-	67.2	18.0	14.8
Rose: 0.1-10				
Male	-	80.2	9.9	9.9
Female	-	76.7	10.5	12.8
10.1-25				
Male	0.9	79.8	9.4	9.8
Female	-	76.5	9.1	13.4
25.1-50				
Male	0.5	73.1	13.7	12.7
Female	0.9	72.2	8.3	18.5
50.1+				
Male	0.4	65.9	13.1	20.6
Female	1.6	62.0	17.1	19.2

8. Concluding points

In Malaysia, female labour force participation and the female share of manufacturing employment rose in the 1980s, as they did in many countries.[24] The MLFS data show that in the industrial labour market, the feminisation of employment was sustained through the serious recession of the mid 1980s and that it could be expected to continue. The continuing trend to greater export-oriented production was promoting this, a pattern that one would expect in the many other countries that have been shifting to export-led industrialisation strategies.[25] Moreover, while female wage earnings remained below those of their male counterparts, there is some evidence that job segregation was declining and that women's relative wages were rising. But one should not be too sanguine. Feminisation of employment in Malaysia was associated with more precarious labour relations.

In the Philippines, the continuing discrimination against women in terms of recruitment, training and wages has to be observed in the context of recently strengthened legislative commitment to sexual equality in the labour market, including a "national plan for women" and a Dutch-funded project, "Women in new trades", designed to help promote women's access to a wide range of occupations.

This paper has attempted to create building blocks for a systematic analysis of the process of discrimination, segregation and cumulative disadvantage. It does not pretend to provide that system in synthetic form. There is always a temptation in statistical research to stretch the data beyond the point to which their accuracy or their underlying concepts justify taking them. Estimating some sort of recursive model would be fairly straightforward. But it would be more respectable to take stock at this stage. The following illustrates, somewhat crudely, the theoretical model that we have postulated in the body of the paper. The bold lines indicate the main hypotheses, as supported by the statistical analysis, and the dotted lines indicate possible links that would modify or accentuate the strength of those statistical findings. Thus, discrimination at the hiring stage influences the share of employment taken by women, and this influences the average wage, the wage of women workers and the male-female wage ratios. An intervening variable is training. The data for the Philippines show pervasive discrimination against women in that sphere, and that must influence the percentage share of jobs taken by women as well as their share of higher-level jobs and their relative wages. But there is also the likelihood of feedback effects, some strengthening segregation, some potentially

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[24] For trends in Malaysian labour force participation, see A. Cheshire, Labour force participation in Malaysia (Report prepared for the ILO-EPU Human Resource Development Project, 1989, mimeo.); for international trends on participation and manufacturing employment, see Standing, 1989, op.cit., especially Tables 3 and 5.

[25] However, it should be noted that some authoritative observers question the trend towards feminisation of manufacturing employment, as hypothesised in this and related papers.

weakening it. Thus, if a high female share of employment lowers female wages <u>more than</u> male wages, then one might expect employers to adjust their recruitment to employ more women. By contrast, if discriminatory hiring reduces the female share of employment to a low level, that might accentuate discriminatory hiring practices <u>and</u> deter women from applying to such firms.

The Discrimination-Disadvantage Process
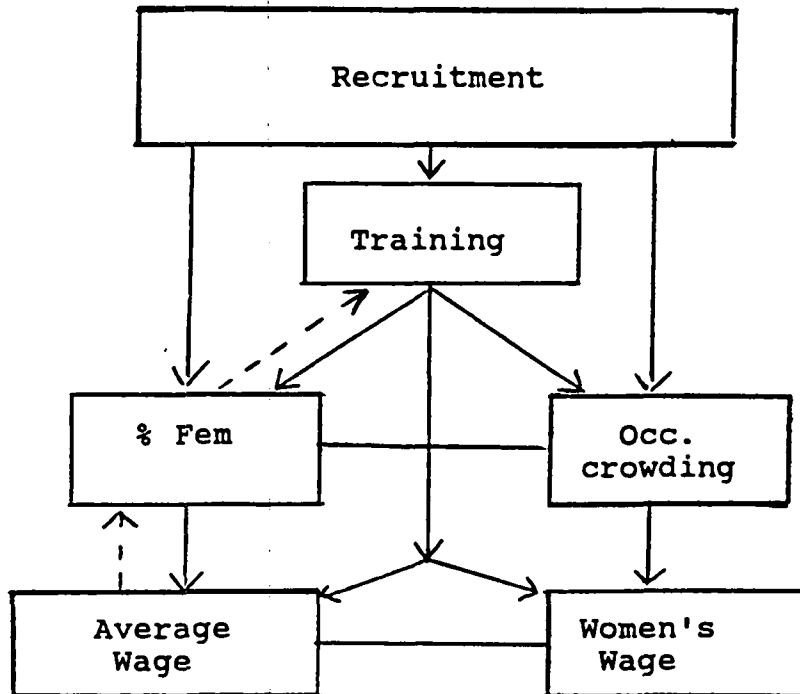
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