

DOES THE GLOBAL FINANCIAL CRISIS AND RETRENCHMENTS AFFECT THE MANUFACTURING INDUSTRIES LABOUR PRODUCTIVITY IN MALAYSIA?

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ABSTRACT

This paper examines retrenchment activities since the global financial crisis occur and the effect of retrenchment and global financial crisis on the labour productivity of the manufacturing industries in Malaysia. Due to the crisis, many industries retrenched their workers to adjust to the declining demand in their respective industries. Two distinctive sub-industries that have the highest retrenchment rates are the manufacture of radio, television and communication (27%) and manufacture of rubber and plastics (13.3%) out of total retrenchments within the last three years (2009-2011). The main reason for the retrenchments is the deteriorating demand for their products. Using panel data analysis with fixed effects on monthly data from 2003 till August 2011, the study finds that the 2008-2009 crisis has positively affected the labour productivity of the industries. The study also finds that the industries activities of recruiting and retrenching do not significantly affect their labour productivity regardless of their size. These findings suggest that the industries adjust their employment level not to improve their labour productivity but rather to respond to the changing demand of their products. With the country set to become a high income economy by 2020, the industries have to change their employment and production strategy to ensure that they can improve their labour productivity and hence, increase their profitability.

Keywords: Financial crisis, labour productivity, retrenchment.

INTRODUCTION

The current global financial crisis (GFC) has its effects on our economic growth, especially since the third quarter of 2008. Among the most affected are the manufacturing industries and in particular the electrical and electronics industries. Multinational firms retrenched or announced retrenchment plans as early as the end of 2008. The worse is expected to follow. Current retrenching activities among local firms are now made available by the Ministry of Human Resource. As the impact of the global financial crises would inevitably reach the local firms, their retrenching activities need to be studied. We need to know whether these retrenching activities have actually increased the labours' productivity. This outcome is crucial as retrenching is a measure that has to be taken in order to survive and sustain in the market. Due to contradicting results as reported in empirical studies, we need to ascertain the outcome in the case of Malaysian firms.

LITERATURE REVIEW

Retrenching or downsizing is defined as an intentional management action involving a reduction in personnel designed to improve a company's competitive position in the market place (Amabile and Conti, 1999; Freeman and Cameron, 1993). During the current global financial crisis, firms and corporations are searching for strategies to enable them to survive and sustain their profitability. These firms retrenched or retrench so that they can (a) reduce operating costs, (b) eliminates unnecessary level of management, (c) streamlines operations, (d) enables an organisation to prune deadwood, (e) enhances overall effectiveness, and (f) ultimately, makes a firm more competitive in today's market place (Byrne, 1994; Fuchsberg, 1993; Koretz, 1997; Collins and Rodrik, 1991; McKinley et al., 1995). Meuse, Vanderheiden, and Bergmann (1994) found that the evidence suggests retrenching is more likely to be effective when it is part of an organization's overall long-term strategic planning process.

However, retrenching can have negative effects on firms, such as (a) reducing profits, (b) slowing dividend growth, (c) lowering stock prices, (d) decreasing employees' morale and satisfaction, (e) increasing tardiness, absence, and turnover, and (f) escalating employees' workloads, stress, and companies' health care expenses (Reich, 1993; Worrell et al., 1991; Mishra and Spreitzer, 1998; Noer, 1993; Pfeffer, 1998). In addition, Fisher and White (2000) and Lei and Hitt (1995) contend that retrenching disrupts or damages an organisation's ability to learn and adapt to the changing environment because the informal communication networks are adversely affected. Yu and Park (2005) found that firms implementing retrenching tended to suffer more financial difficulties than their counterparts.

De Meuse and Marks (2003) point out that there are very few, if any, scientific data organisational leaders can point to that support the efficacy of this retrenching strategy. It may be due to the reasons that managers simply assume the overall benefits outweigh the cost, or they perceive that they have no alternative, i.e. if they do not cut costs immediately, their firms will not survive, or they simply jumped on the retrenching bandwagon as it complies to their quality circles and re-engineering requirements and so on. There has been a great deal of discussion concerning the efficacy of retrenching on firms' performance in the media and professional literature, however, there have been relatively few empirical studies or theoretical papers published in academic journals. For the purpose of this study, focus is given the economic theoretical perspective. From this perspective, managers are assumed to engage in retrenching to reduce organisational costs and hence, enhance financial performance (McKinley et al, 2000). Söderbom, Teal and Wambugu (2002) found the changes in wages respond to changes in profits per employee and size of the firm. Leung, Meh and Terajima (2008) found the productivity gap and differences in firm size are concentrated in the smallest and largest categories, the barriers faced by the smallest firms are unlikely to be the same as those faced by the largest firms.

Based on Estache, Laffont and Zhang (2003), Collusion between workers and the manager in charge of retrenching induce more screening than in the absence of collusion if information asymmetry is large enough. According to this economic paradigm, organisational retrenching has a positive effect on a firm's financial performance, as it enables the management to eliminate redundancies, streamline operations, and reduce labour costs. However, Yu and Park (2005) found that retrenching showed a positive effect by improving a firm's profitability and efficiency, but no effect on employee productivity. The economic literature is largely

based on managerial and employees' perceptions of retrenching effectiveness. However, Cameron et al (1991) found that employees did not perceive an improvement in the effectiveness of their company. On the contrary, they perceive a decline in production quality, quantity and employee morale. Djordjević and Djukić (2008) found there is a great possibility for retrenching to be an unsuccessful firm's strategy and therefore to decrease the corporate reputation, it is important before making the decision about retrenching to reconsider the necessity of such a decision.

On the effect of retrenching on financial performance, De Meuse et al (1994) compare companies that announced layoffs with those that did not layoff and found that they do not differ financially during a period of one to two years prior to the announcement. Their t-tests revealed that the layoff firms had significantly lower profit margin, return on assets, return on equity and the market-to-book ratios during the announcement year and this increase in magnitude in the two years that follow. Meuse, Bergmann, Vanderheiden and Roraff (2004) found that companies laying off 10% or more of the work force significantly under-performed firms laying off less on profit margin, ROA, ROE, and market-to-book ratio. Meuse et al (1994) found, the announced layoffs do not enhance financial performance. Based on Yu, and Park (2005) work, the improvement of financial performance (ROA) by retrenching was found to be greater among companies that had not experienced any loss than among those that had experienced loss. Cascio (1998) shows that none of the financial variables were significantly affected following retrenching. Even during the pre-retrenching period, the financial variables were unrelated to the magnitude or frequency of retrenching activities. Based on Kirkham, Richbell and Watts (1998), the survey evidence from managers involved suggests such decisions are not always based on financial information. However, Goddard, Tavakoli and Wilson (2007) found that as in several previous studies, the firm-level effects are the most important class of effect in explaining the variation in performance.

Datta, Guthrie, Basuil and Pandey (2010) found, although research on retrenching is growing, it is still dwarfed by the magnitude of this phenomenon in the marketplace. There are a host of theoretically and practically important issues in need of additional research. The organizational researchers need to apply relevant methodologies to these important and complex research questions.

RESEARCH METHODOLOGY

This study uses data on retrenchment in the manufacturing industries made available by the Ministry of Human Resource. The data are monthly statistics for 2009 till 2011 which covers retrenchment activities by state and industry, and reasons for retrenchment.

This study also uses monthly data collected by the Department of Statistics (DOS), Malaysia, in their monthly manufacturing survey. Monthly data is used due to limited time dimension available for annual data, i.e. 2000 to 2007, and therefore cannot capture the effects of the recent global financial crisis. By using the monthly data, the time dimension is greatly enhanced from 7 years to 104 months as the monthly data are updated monthly whereas the yearly data are only available three years later. This is important to capture more time series in the panel data analysis. Furthermore, the monthly data would be able to capture the recession immediate effects on the firms' response to retrench. The data obtained from DOS

are industries specified at 5-digit MSIC (Malaysian Standard of Industrial Classification) level and deflated to get their real values wherever necessary.

This study uses panel data analysis with fixed effects after performing the Hausman tests. The independent variables in the model are size, wage, retrenchment and GFC. The dependent variable is labour productivity. Details of the variables are in the following section.

DESCRIPTIVE STATISTICS

The descriptive statistics of the variables that has continuous values are given in Table 1. Size is average size, which is measured by the number of paid employment divided by the number of establishments at 5-digit MSIC level. It has a mean of 336.50 and a standard deviation of 436.46. According to the table below, the average size of firms in each industry has a minimum of 9 paid workers and a maximum of 7667 paid workers. Wage is average wages, which is measured by the paid salaries divided by the number of labor. It has a mean of RM2,500 and a standard deviation of RM4,160. The workers earned a minimum average wages RM400 per month and a maximum of RM83,800 per month.

TABLE 1: DESCRIPTIVE STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
Size	11856	336.50	436.36	9	7667
Wage	11856	2.50	4.16	0.40	83.80
Labour Productivity	11856	21.23	104.10	-5315.98	1530.57

Labour productivity is measured by the real sales revenue minus raw material divided by the number of labor. It has a mean of 21.23 and a standard deviation of 104.10. According to the table above, the average labour productivity of firm in the industries has a minimum of -5315.98 and a maximum of 1530.57. The panel of all variables are strongly balanced with total observations of 11,856.

The dummies for retrenchment and GFC are specified as 1 if Yes, 0 otherwise. Using the dataset provided by DOS, retrenchment is identified if the specific industry has reduced at least three workers on average during the specific month, not less. GFC is identified as a period from October 2008 till December 2009 when the crisis actually occurred.

Correlation

The relationship between the labour productivity and average size is negative with a correlation coefficient (r) of -0.30. Even though it is significant at 5%, but it indicates quite a weak relationship. The positive sign indicates that when labor productivity increases, average size tends to decrease. The relationship between the average wages and average size is negative with a correlation coefficient (r) of -0.03. The coefficient is very low. The negative sign indicates that as average wages increases, average size tends to increase. The

relationship between the average wages and labor productivity is positive with a correlation coefficient (r) 0.10. The positive sign indicates that on average wages increases, labor productivity tends to increase.

TABLE 2: CORRELATION BETWEEN VARIABLES

	Size	Labour Productivity	Wages
Size	1.00		
Labour Productivity	-0.30	1.00	
Wage	-0.03*	0.10*	1.00
	0.0030	0.0000	

RETRENCHMENT ACTIVITIES AT STATE LEVEL

During the three years since the GDC faced by Malaysia, ie 2009 to 2011, the Ministry of Human Resource has recorded about 41,600 retrenchments in the manufacturing sector. The peak was in 2009 where 60% of all retrenchments during that period took place. This is not surprising as it was during 2009 that Malaysia faced its recession.

Compared to other states in Malaysia, Johore experienced the highest rate of retrenchment, with an average of 23.8% (9914) for all the three years. This is followed by Selangor with an average of 21.0% with 8721 retrenchments. This is followed by Penang at 17.6% with 7305 retrenchments, Kuala Lumpur at 10.4% with 4309 retrenchments, Perak at 7.1% with 2956 retrenchments and Malacca at 6.9% with 2890 retrenchments. Almost 98% of these retrenchments took place in the Peninsular Malaysia where most of the working population and industries are.

In East Malaysia, Sarawak experienced 1.6% (664) out of total retrenchments during the same period. Much of the retrenchments, ie 44.3% out of the total 664 reported, took place in 2009. This excludes the retrenchments due to the closure of the Western Digital factory in December, 2008. Sabah, on the other hand, has 0.9% (370) out of total retrenchments, with almost 60% of them occurring in 2011. The effect of the global financial crisis in Sabah seems rather belated. This may indicate the reluctance to retrench immediately following the onset of the crisis and the firms' ability to sustain with their current number of employees until 2011. While this is favourable to the affected workers, it may not be good for the industries as they have to bear higher cost of operation.

TABLE 3: RETRENCHMENTS BY STATE FOR 2009-2011

State	2009		2010		2011		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Johore	6071	24.2	1281	18.1	2562	27.1	9914	23.8
Kedah	1310	5.2	238	3.4	122	1.3	1670	4.0
Kelantan	27	0.1	225	3.2	13	0.1	265	0.6
Malacca	1233	4.9	979	13.8	678	7.2	2890	6.9
Negeri Sembilan	501	2.0	96	1.4	40	0.4	637	1.5
Pahang	464	1.9	5	0.1	196	2.1	665	1.6
Perak	1282	5.1	367	5.2	1307	13.8	2956	7.1
Perlis	282	1.1	574	8.1	3	0.0	859	2.1
Penang	5275	21.0	927	13.1	1103	11.7	7305	17.6
Selangor	5717	22.8	1091	15.4	1913	20.2	8721	21.0
Terengganu	263	1.0	25	0.4	48	0.5	336	0.8
F.T. -Kuala Lumpur	2101	8.4	1110	15.7	1098	11.6	4309	10.4
F.T. -Labuan	118	0.5	1	0.0	4	0.0	123	0.3
Total - Peninsular M'sia	24644	98.3	6922	97.7	9087	96.2	40653	97.7
Sabah	124	0.5	27	0.4	219	2.3	370	0.9
Sarawak	294	1.2	232	3.3	138	1.5	664	1.6
Total - Malaysia	25064	100	7085	100	9450	100	41599	100
%	60%		17%		23%		100%	

Source: Compiled from the Ministry of Human Resource data.

Manufacturing industries in Kelantan did most of their retrenching in 2010, instead of 2009 like most states. However, their retrenchments were still the lowest among all states, which was merely 0.6% (265) out of total retrenchments in the country's manufacturing sector. Various reports have shown that industries that are more export oriented tend to be more affected by the crisis. Therefore, states that have more export oriented industries are expected to resort to higher retrenchments compared to those that have less.

REASONS FOR RETRENCHMENTS

As the world was facing the GFC, most of the retrenchments were crisis-induced. This is evident from the survey on companies that retrenched workers during the period. More than half of them retrenched workers due to deteriorating demand of the product (22.2%), drop in product market (16.8%), no demand for product or services (12.8%) and reduction in production (1.8%). See Table 4. Another 10.2% companies specify their reason to retrench as due to high cost of production. This reason, in fact, is also induced by the global financial crisis because as sales fall, revenue falls and it is reducing the companies' profit margin or even incurring losses. Cost of production becomes too high to maintain. To sustain, reducing cost of production is inevitable. The most likely factor that will be adjusted is the variable factor, ie labour. Variable factors are factors that change with output.

TABLE 4: REASONS FOR RETRENCHMENTS FOR 2009-2011

Reasons	2009		2010		2011		Total	
	No.	%	No.	%	No.	%	No.	%
High production cost	147	9.3	33	12.1	43	12.7	223	10.2
Deterioration in demand for product	398	25.3	36	13.2	52	15.4	486	22.2
Shift to automated system	6	0.4	0	0.0	6	1.8	12	0.5
Part of operation has shifted to another place	3	0.2	3	1.1	5	1.5	11	0.5
Reduction in production of product	13	0.8	9	3.3	17	5.0	39	1.8
Sale of company	38	2.4	20	7.3	18	5.3	76	3.5
Closure	2	0.1	16	5.9	31	9.2	49	2.2
Drop in product market	310	19.7	26	9.5	31	9.2	367	16.8
Recruitment difficulties	1	0.1	0	0.0	4	1.2	5	0.2
No demand for product/services	215	13.6	31	11.4	33	9.8	279	12.8
Outsource	25	1.6	8	2.9	12	3.6	45	2.1
Others	262	16.6	80	29.3	77	22.8	419	19.2
No reason	156	9.9	11	4.0	5	1.5	172	7.9
Total	1576	100	273	100	338	100	2187	100
%	72%		13%		15%		100%	

Source: Compiled from the Ministry of Human Resource data.

During the same period, a total of 76 companies retrenched due to the sale of company, 49 companies retrenched due to closure and another 45 companies retrenched due to outsourcing their operation. Companies that are sold or closed tend to be companies that are not financially stable before their sale or closure. The global financial crisis did not help to cope at all as the recession proves too challenging to sustain in the business. The natural option is to avoid or minimise their losses through closure or sale. Another 45 companies outsource some or part of their operation when production proves to be uneconomical to manage, especially when they failed to get the volume of sales that they need.

RETRENCHMENTS AMONG THE MANUFACTURING INDUSTRIES

Out of the 23 main classifications of manufacturing industries (see Table 5), the radio, television and communication equipment and apparatus industries workers suffered the highest retrenchments, with 26.9% (7106) out of the total of 26,381. This is followed by rubber and plastic industries at 13.2% (3484), office, accounting and computing machinery industries at 7.7% (2,037), furniture, n.e.c. at 7.5% (1970), electrical machinery and apparatus, n.e.c. at 6.9% (1820) and other transport equipment at 5.8% (1539).

The least affected industries with the lowest retrenchments (besides recycling) are core, refined petroleum products and nuclear with merely 0.1% (16) out of total retrenchments, tanning and dressing of leather and related industries at 0.2% (55) and tobacco product at 0.5% (138).

TABLE 5: RETRENCHMENT BY MANUFACTURING INDUSTRIES 2009-2011

Industries	2009		2010		2011		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Food products & beverages	126	0.7	268	8.0	91	1.7	485	1.8
Tobacco product	7	0.0	74	2.2	57	1.0	138	0.5
Textiles	145	0.8	831	24.9	85	1.6	1061	4.0
Wearing apparel; dressing & dyeing of fur	576	3.3	52	1.6	124	2.3	752	2.9
Tanning & dressing of leather; luggage, handbags, saddlery, harness & footwear	47	0.3	8	0.2	0	0.0	55	0.2
Wood & products of wood & cork, except furniture; articles of straw & plaiting materials	228	1.3	324	9.7	751	13.8	1303	4.9
Paper & paper products	149	0.8	83	2.5	5	0.1	237	0.9
Publishing, printing & reproduction of recorded media	150	0.9	88	2.6	25	0.5	263	1.0
Core,refined petroleum products & nuclear	16	0.1	0	0.0	0	0.0	16	0.1
Chemicals & chemical products	105	0.6	95	2.8	378	6.9	578	2.2
Rubber & plastic products	2567	14.6	472	14.1	445	8.2	3484	13.2
Other non-metallic mineral products	553	3.1	46	1.4	68	1.2	667	2.5
Basic metals	210	1.2	9	0.3	110	2.0	329	1.2
Fabricated metal products, except machinery & equipment	741	4.2	97	2.9	139	2.6	977	3.7
Machinery & equipment n.e.c	574	3.3	58	1.7	289	5.3	921	3.5
Office, accounting & computing machinery	562	3.2	80	2.4	1395	25.6	2037	7.7
Electrical machinery & apparatus n.e.c	1626	9.2	114	3.4	80	1.5	1820	6.9
Radio, television & communication equipment & apparatus	6467	36.8	208	6.2	431	7.9	7106	26.9
Medical, precision & optical instruments, watches & clocks	573	3.3	247	7.4	2	0.0	822	3.1
Motor vehicles, trailers & semi-trailers	66	0.4	112	3.4	92	1.7	270	1.0
Other transport equipment	545	3.1	278	8.3	716	13.1	1539	5.8
Furniture; n.e.c	1538	8.7	317	9.5	115	2.1	1970	7.5
Recycling	15	0.1	0	0	0	0	15	0.1
Total	17596	100	3339	100	5446	100	26381	100
%	67%		13%		20%		100%	

Source: Compiled from the Ministry of Human Resource data.

EFFECT OF GFC AND RETRENCHMENT ON LABOUR PRODUCTIVITY

To analyse the effect of GFC and retrenchment on labour productivity, two models were run as shown in Table 6. In both the models, the retrenchment dummy captures retrenchment only when the firms in the industry reduced three or more workers in the current month, following De Meuse (1994) work. Reduction in the number of workers by two or less are excluded. It should be noted that retrenchment activities did not only occurred during the GFC but there were rather scattered at different periods for different industries. As some firms retrenched the workers during the GFC, others continued to recruit workers despite the crisis. To capture the effect of GFC, the GFC dummy is included in both models. Average wage is included in the model as a control variable.

**TABLE 6: PANEL DATA REGRESSIONS WITH FIXED EFFECTS
 DEPENDENT VARIABLE: LABOUR PRODUCTIVITY**

Variables	(1)	(2)
Constant	-0.5024 (0.0163)	-0.5514 (0.0647)
Average Size (ln)		0.0085 (0.0117)
Retrenchment Dummy	-0.0069 (0.0082)	
Average Wage (ln)	0.7306 (0.0088)**	0.7312 (0.0087)**
Global Financial Crisis Dummy	0.0332 (0.0094)**	0.0325 (0.0094)*
R² :		
within	0.7539	0.7535
between	0.7001	0.6940
overall	0.7208	0.7177
F-Stat (P value)	8902.31 (0.0000)	8969.55 (0.0000)
Observations	11740	11856

Notes: Coefficients are labelled ** and * to denote statistical significance at 1% and 5% levels respectively. Values in parentheses are standard errors.

Retrenchment is found to be insignificant in determining labour productivity. This means that the firms reduced their workers not to improve labour productivity but rather to adjust to the current demand for their product as discussed in the earlier subsection on reasons for retrenchments. This may also indicate insignificant shift in the method of production from labour intensive to capital intensive. The shift may have taken place in some firms for some industries, but generally, during the period 2003-2011 covered in the study, they are not significant. As shown in Table 4, during the 2009-2011 period, only 0.5% (12) of total retrenchments was due to the shift to automated system. This shows that the effect of the shift on employment was minimal during this period. In fact, in industries that rely substantially on foreign workers, the shift is highly encouraged to reduce our reliance on them. With the implementation of the minimum wage order which will be enforced on 1 January, 2013 for most firms in all sectors, shifting to automated system or other more effective methods that will create higher value added should be the order of the day, if we are to become a high income economy by 2020.

GFC is found to have a positive significant effect on labour productivity. The GFC variable captures the period from the fourth quarter of 2008 to the fourth quarter in 2009, when the crisis actually set in. Due to the concern that arised during the economic crisis and the possible threat of retrenchments, workers may have been motivated to work harder to help their company and themselves to go through the crisis proactively. The economic stimulus packages announced in November 2008 and February 2009 may have played its role in making the result from this finding possible.

In model 2, the retrenchment dummy is replaced with average size of firms in the manufacturing industries. The retrenchment dummy is omitted to avoid multicollinearity problem. Similar to the retrenchment result, size is found to be insignificant in influencing labour productivity. This means that the industries activities of recruiting and retrenching do not significantly affect their labour productivity regardless of their size. These findings suggest that the industries adjust their employment level not to improve their labour productivity but rather to respond to the changing demand of their products. With the country set to become a high income economy by 2020, the industries have to change their employment and production strategy to ensure that they can improve their labour productivity and hence, increase their profitability.

CONCLUSION

This paper analyses retrenchment activites in the recent years since the onset of the GFC. Retrenchments are particularly high in 2009 for most states, whereas others have a belated effect in 2010 and 2011 instead. The main reasons for the retrenchments are related to the GFC which has brought Malaysia into recession in 2009. Two main subsectors that was most affected were the manufacture of radio, television and communication equipment and apparatus, and manufacture of rubber and plastic products.

In examining the effect of GFC and retrenchment on labour productivity, the study provides evidence that retrenchments do not have significant effect on labour productivity of the industries. On the contrary, GFC does have significant effect on labour productivity of manufacturing industries in Malaysia. These results provides insights to what happened during the global financial crisis within the scope of this study. Inevitably, there are still a lot that the industries need to initiate to ensure their firms can enjoy from higher value added products. Creating higher value added products and services will put our economy in the right path towards achieving a high income economy status by 2020.

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