

## CHAPTER 1

### INTRODUCTION



#### 1.1 Background

Thailand has been implementing National Socio-Economic Development Plans since 1962. Consequently, Thai economic structure has been changed from agriculture to industrial dominance. Industrial sector contributes a high proportion to Thai economy. Since 1987, Thailand's economy had continuously expanded at an average growth rate of 10.3% per year before confronting the economic crisis in 1997. Thanachaisethawoot (2001) presented that during the last decade, Thai government concentrated on economic development and international competition by taking advantage of plenty of labour force, and lower wage rate. Thai government also set up various measures to promote investment, especially in industrial sector, which led to substantial growth of industrial sector, for instance, textile, electronics, food and beverage, construction. The industrial sector is a major destination of labour force migration, and generates higher income to workers and their family. However, along with such higher income of workers, there is negative impact of industrial-oriented development directly on workers. The lack of occupational safety, and hazardous working environment lead to injuries at work, including work accidents and occupational diseases. As for Thailand industrial development did not introduce work safety measures in the initial stage, accompanied by the adoption of new production technology, such as machines; equipment; and chemicals in production, without sufficient knowledge in respect of proper use of imported new technology, resulting in a number of work accidents and injuries. (Ministry of Labour and Social Welfare [MOLSW], 1995)

Work accident is considered a major health problem in many countries. Recently, it has been estimated that the total number of work accidents each year has grown to 125 million worldwide and the rate of work fatality is 1.1 million per year. (The Canadian Centre for Occupational Health and Safety, n.d.) The International Labour Organization (ILO) presents that the number of reported

accidents has increased sharply in such countries with rapid industrialization or improved reporting system for accidents. Many of accidents are serious, resulting in fatalities. The ILO also mentions that although accurate statistics on work accidents in Asia and the Pacific are unavailable, the ILO has estimated that each year, about 200,000 workers worldwide die and as many as 120 million workers are injured or suffer from illness. Presumably over half of these figures are for the Asian and Pacific regions, implying high risks in many industries. The ILO has concluded that high rates of fatalities are apparently related to rapid industrialization, modernization of agriculture and the introduction of new technologies, including dangerous machines. Rapid changes in work methods and new work situations, including the movement of heavy materials, have also increased risks of accidents. The work safety environment can be aggravated by newly transferred technologies. (The International Labour Organization [ILO], 2002 a.)

The ILO (2002 a.) presents that work accidents in many industrialized countries have been reduced significantly. For example, fatal accidents have decreased to less than half during the last two decades. The ILO points out that the decrease is encouraging as it shows the possibility of reducing occupational accident rates drastically if concerted efforts are made. However, the ILO also addresses that although the rate of work accidents, particularly fatality, has generally decreased in many industrialized countries, this trend is not seen in some developing countries.

At the level of Asian and Pacific regions, the ILO reports that work injury and fatality rates are high, especially in developing countries, even alarmingly higher in some developing countries in Asia, several times greater than those found in industrialized countries -- around 30 to 43 per 100,000 workers. (ILO, 2002 a.)

In Thailand, based on the statistics from the Workmen's Compensation Fund (WCF), which is the most reliable source in this matter, work injury, mostly caused by occupational accidents, has dramatically increased. Then, the economic crisis and the collapse of industries reduced the work injury rate during

1997-1999 before increasing in 2000 as shown in Table 1. 1 (Workmen's Compensation Fund [WCF], 2001)

Table 1.1: Work injuries and fatalities, and compensation payment in Thailand, 1985-2000

Year	Worker covered	Work Injury		Work fatalities		Payment (million baht)
		case	rate (%)	case	rate per 100,000 workers	
1985	1,091,318	39,119	3.58	315	28.9	232.61
1986	1,179,812	37,445	3.17	285	24.2	218.48
1987	1,232,555	42,811	3.47	325	26.4	267.74
1988	1,346,203	48,912	3.63	282	20.9	346.76
1989	1,661,651	62,766	3.78	373	22.4	396.93
1990	1,826,995	79,028	4.33	564	30.9	442.65
1991	2,751,868	102,273	3.72	581	21.1	623.80
1992	3,020,415	131,800	4.36	740	24.5	753.31
1993	3,355,805	156,548	4.66	980	29.2	926.51
1994	4,248,414	186,053	4.38	816	19.2	1163.39
1995	4,903,736	216,335	4.41	940	19.2	1370.03
1996	5,425,422	245,616	4.53	962	17.7	1541.45
1997	5,825,821	230,376	3.95	1,041	17.9	1986.48
1998	5,145,835	186,498	3.62	790	15.4	1629.82
1999	5,321,872	171,997	3.23	611	11.5	1404.40
2000	5,417,041	179,566	3.31	620	11.4	1256.81

Source: The Office of Workmen's Compensation Fund, 2001

The data obtained from WCF is considered to be under estimate since WCF covers only workplaces with 10 workers or more, and excludes temporary employees in agriculture, employees of government offices and state enterprises. (Thanachaisethawoot, 1995) However, the work injury rate of 32.3 – 46.6 per 1,000 workers is far higher than the national target, set by the Ministry of Labour

and Social Welfare (MOLSW), aimed to reduce the figure to less than 26 per 1,000 workers by the year 2001.

Thailand's work injury rate is also rather high when compared to those of other countries, as shown in Table 2. (WCF, 2001; ILO, 2002 b.)

Table 1.2: Work injury rates in some countries

Country	Year	Fatality rate per 100,000 workers	Non-fatality rate per 100,000 workers
Canada	1999	6.7	3067
Hong Kong	1999	9.7	2419
Japan	1999	0.01	NA
Korea	2000	19.0	NA
Malaysia	1999	10.6	932
Switzerland	1999	2.4	2685
United Kingdom	1999	0.7	666
United State	1999	1.0	939
Thailand*	2000	11.4*	3,303*

Sources: International Labour Organization statistics (ILO), 2002

\* The Office of Workmen's Compensation Fund, 2001

## 1.2 Rationale

Work accidents, which led to death and disability and loss of part of body, can affect both workers and employers, and also to society as a whole. The World Health Organization (WHO) mentions that substantial economic losses are caused by health and safety hazards at work and reduction or loss of working capacity, accounting for 10-20% of Gross National Product (GNP) in some countries. (The Canadian Centre for Occupational Health and Safety, n.d.) The low priority given to occupational health is more surprising in view of the fact that most occupational health hazards are preventable.

ILO (2002 a.) presents that as the reporting of occupational accidents and diseases improves, many countries are becoming increasingly aware of the associated economic costs. They include costs for lost work time and productivity, compensation and medical expenses by the social security system, and damage caused by accidents. In the countries where workers' compensation costs arising from occupational accidents can be studied in detail, the figures are enormous. The studies point not only to the economic costs, but also to the social burdens associated with such costs and the suffering of individual workers and their families. Report from the Australian Bureau of Statistics (cited in ILO, 2002 a.) shows the workers' compensation costs as a percentage of major labour costs in different sectors in Australia. While it is encouraging to see the downward trend in workers' compensation costs in all sectors, the percentage is still over 2 percent for all industries. The percentage is considerably higher for construction, manufacturing and mining sectors, amounting to 3 to 4 percent during the periods from 1986/87 to 1990/91. This level is significant enough to affect the economic performance of the industries concerned. The disclosure of such data on the costs of occupational accidents and diseases has given an impetus to concerted efforts to reduce such costs. Similar efforts should be undertaken in other countries and industries. (ILO, 2002 a.)

In Thailand, Workmen's Compensation law has been enacted since 1972, per National Executive Council Announcement No. 103, issued on 16 March 1972. According to this law, employers are mandated provide immediate proper care, and also pay for medical treatment, rehabilitation, compensation for death or disability or loss of part of body, and funeral. WCF was set up to assume such liabilities of employers when employees are injured, sick, disabled or die from work injury. Workplaces with 10 or more employees must pay contributions to the WCF. The contribution rate is between 0.2% and 1.0% of each employee's yearly earnings, depending on the risk classification. The Workmen's Compensation law was developed and changed to the Workmen's Compensation Act in 1994. The amount of compensation payment from the WCF increased to as high as 1986.48 million baht in 1997, and then decreased according to reduced work injuries caused by the economic crisis. The data from WCF also reveals that most of the work injured workers are between 20 – 40 years old, the most

productive age range. In 2000, work injury cases for workers between 20 – 40 years old account for 70% of all death cases and 78% of all injuries. (WCF, 2001)

This study aims at estimating the magnitude of economic loss from work accident in Thailand and identifying the determinants of work injury rate in order to provide information to the related organizations to give higher priority and take proper measures to prevent work accidents.

### **1.3 Research Questions**

- What is the monetary value of economic loss from work accidents covered by the Workmen's Compensation Fund in Thailand in 2000?
- What are the magnitude of economic loss when compared with GDP, employees' earnings, and compensation payments from the Workmen's Compensation Fund?
- What are the determinants of work injury rate in Thailand?

### **1.4 Research Objectives**

- To estimate the monetary value of economic loss from work accidents covered by the Workmen's Compensation Fund in Thailand in 2000;
- To estimate the magnitude of economic loss when compared with GDP, employees' earnings, and compensation payment from the Workmen's Compensation Fund;
- To obtain the determinants of work injury rate in Thailand.

### **1.5 Scope of the Study**

This study estimate the economic loss from work accidents based on WCF data of approved work injury claimants, in the year 2000. Direct loss is WCF payment, paid in the form of medical treatment and rehabilitation in 2000. Indirect loss from work injury is estimated in terms of workers' earning loss. Work injury is classified into 5 levels of severity: death, permanent total

disability, permanent partial disability, temporary disability more than 3 days, and temporary disability for not more than 3 days.

The estimation of the loss of earning capacity applies the “Human Capital Approach” based on a concept that if workers were not dead, they would be able to earn money until they reach the end of working life. Abridge life table and working life table methods are constructed to obtain the expected remaining working year of each age group. The expected future earning is estimated by applying the respective earning growth rates of 6%, 8% 10% and 12% and, then is calculated into the present value. In addition, the opportunity loss of workers’ family members is also taken into account to elaborate Thai social context that family members always take care of member during illness or injury.

The determinants of work injury rate are identified by multiple linear regression analysis based on secondary data from related organizations. Time-series data of 1981 –2000 are applied in the model estimation, using ordinary least square method to obtain coefficients, t-statistics, Adjusted R-square and F-statistics.