RESEARCH NOTE

CONTRIBUTION OF MORTALITY DECLINE TO LONGER WORKING LIFE: THE CASE OF INDONESIAN MALES
1980–1995

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The length of working life of Indonesian males has been estimated for 1980 and 1995. Data on age specific labour force participation rates are obtained from the 1980 census and the 1995 intercensal population survey. Data on age-specific mortality have been adopted from appropriate model life tables based on indirect estimates of child mortality in the absence of any direct information about mortality. The contribution of declining mortality to the lengthening of working life has been greater than the contribution of higher labour force participation rates. Reductions in mortality at ages before entry into the labour force have increased the potential for added and improved education and training needed for the work force, which is also a contribution of reduced mortality to human capital development. The findings have implications for policy and future employment plans.

In conventional terms working life starts at 15 years and ends at 65 years. Under this convention, the potential working span of a person is 50 years. In an economy like that of Indonesia, where the majority of the population lives in the rural areas, people enter the labour force before the age of 15 and continue to participate in the labour force beyond the age of 65 years, giving a potential working life of more than 50 years. The actual length of working life is a function of labour force participation rates (LFPRs) and mortality rates in the working ages. The working life of a person can be interrupted by illness or by death. Therefore, strictly speaking, one should use data on morbidity, disability and mortality, but because morbidity and disability statistics are not available with the required degree of detail and accuracy, mortality data are used instead to indicate the health factor. The LFPR is primarily determined by the prevailing economic forces and the health status of the working-age population. The reduction of mortality and the increase in labour force participation in Indonesia during the past three decades has increased the potential productive years of the Indonesian population.

A detailed study of any demographic aspect of the Indonesian population in the

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past is hampered by limitations of data. Indonesia conducted its first post-
Independence population census in 1961. However, most of the data collected at
this census were lost owing to the civil disturbances of the mid-1960s. The next pop-
ulation census was conducted in 1971 and although all the data from this census
were processed and published, the labour force data are not directly comparable to
those of the later censuses because of definitional and conceptual differences.

The present note is focused on the period between the 1980 population census
and the 1995 intercensal population survey. These fifteen years have seen significant
growth in the Indonesian economy, much structural change in the Indonesian
labour force and considerable reductions in mortality. The per capita income
increased from US$580 in 1982 (World Bank 1984: 218) to US$980 in 1995 (World
Bank 1997: 214), an increase of almost 70 per cent in 15 years.1 In 1980, the main sec-
tors of the Indonesian labour force comprised 59 per cent agriculture, 12 per cent
manufacturing and 29 per cent services; in 1990 these percentages were respectively
57, 14 and 29 (World Bank 1997: 220). In 1995, agriculture employed 46 per cent,
manufacturing 17 per cent and services 37 per cent of the Indonesian labour force.2
The crude labour force participation rate at ages 10 years and above increased from
68.4 per cent for males and 32.6 per cent for females in 1980 (Abdurochim 1986: 46)
to 72.7 per cent for males and 41.0 per cent for females in 1995 (BPS 1996: 262–263).
Life expectancy at birth increased from an estimated 52.2 years in 1976 to an esti-
mated 64.4 years in 19913 (BPS 1997: 59). The increased labour force participation
and the improved longevity imply an increased length of working life of the
Indonesian population, with implications for the availability of human resources
and their productivity.

The aim of this research note is to estimate the contribution of mortality decline
to human capital formation in Indonesia, by estimating the length of the working
life of Indonesian males in 1980 and 1995; and to calculate the changes in the length
of working life due to changes in labour force participation rate and changes in
mortality. It will be shown that reductions in mortality have made a greater contri-
bution to the lengthening of working life of Indonesian males than have increases
in labour force participation rates. The analysis is useful in showing the effect of
reductions in mortality, through improvements in health and nutrition, on the
availability of human capital.

Method and data

No estimate of the length of working life of Indonesian males is currently available,
primarily because of the paucity of data on mortality. The length of working life is
estimated in this analysis by the method of constructing ‘tables of working life’ or
‘labour force life tables’ (United Nations 1968). This method is based on the tech-
nique of a double-decrement life table, in which a given number of male births, say
100,000 at a given time, a proportion of whom would survive the prevailing mor-
tality rates from birth to the exact age of entry into the labour force at the conven-
tional start of working life (here taken to be 10 years); pass through the working
years according to the prevailing LFPRs, rates of entry into the labour force and
mortality; and leave the labour force at given ages according to the prevailing rates
of retirement and mortality. The LFPRs by five-year age groups from 10 to 65 were
obtained from publications of the Indonesian population census of 1980 (Republic