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Workers' compensation, minimum wages, and moral hazard scope: stylized considerations on a South African case

Giampaolo Garzarelli, PhD, Researcher in Public Economics[1], Director and Associate Professor of Economics[2]
Lyndal Keeton, MEconSc, Senior Research Fellow and Lecturer in Economics[2]
Volker Schöer, MCom, Senior Researcher and Lecturer in Economics[3]
Aldo A. Sitoe, MCom, Senior Research Fellow and Lecturer in Economics[2]
[1] Sapienza – Università di Roma, Dipartimento analisi economiche e sociali
[2] Institutions and Political Economy Group (IPEG), School of Economic and Business Sciences, University of the Witwatersrand
[3] African Micro-economic Research Unit (AMERU), School of Economic and Business Sciences, University of the Witwatersrand

Correspondence: Ms Lyndal Keeton, Institutions and Political Economy Group (IPEG), School of Economic and Business Sciences, Private Bag X3, WITS 2050, Johannesburg, Republic of South Africa
Tel: +27 (0)11 717 8065, Fax: +27 (0)11 717 8081, e-mail: Lyndal.Keeton@Wits.ac.za

ABSTRACT

Viewing issues from the perspective of workers' compensation, the article highlights how for some South African sectors the simultaneous provision of a minimum wage and a permanent disablement coverage increases moral hazard scope. From an economy-wide perspective this increasing scope means that employers (and society) not only pay too much to provide workers' compensation, but are doing so at a mounting pace. The article considers some policy options that are overall not too drastic as regards the elimination of the increasing scope, and in so doing it also reminds us about the crucial importance of careful institutional design.

Key words: **COIDA, minimum wages, moral hazard, public institutions, South Africa, workers' compensation**

1. INTRODUCTION

Workers' compensation in South Africa is regulated by the Compensation for Occupational Injuries and Diseases Act of 1993 (COIDA).[1] Among other functions, the COIDA sets up a system of no-fault compensation for employees who are injured or contract diseases because of their job. More precisely, it establishes that, with few exceptions, an aggrieved party is entitled to compensation without the concurrent necessity to prove that any other party is at fault.[1,2]

It is well-known that the presence of workers' compensation creates excess burdens, or social inefficiencies, especially in the form of what economics terms moral hazard.[3-6] Moral hazard basically involves a shifting of responsibility: it occurs when an individual behaves differently according to whether or not she fully will bear the costs tied to the consequences of her actions. For example, if our home is insured against theft, then we may more often leave the windows ajar when we go to work, i.e. we are willing to incur a higher risk of theft as the insurance company will be responsible for the consequences of theft. When there are misaligned incentives between the insured and the insurer, because some of the actions of the insured – such as leaving the windows ajar – are hidden to the insurer, we have room for moral hazard. With workers' compensation – itself a form of insurance – matters are not much different. Classic moral hazard examples in this case include an employee taking less care on the job (e.g., not always wearing rubber gloves or safety goggles when required), reporting a permanent disablement that is not causally related to the job (e.g., she could report a domestic accident as a work accident), and an employee intentionally injuring herself.[7,8] The bottom line is that moral hazard is one reflection of what economics terms rational behaviour – namely that an individual usually opts for what's best for her based on the evaluation of personal relative costs and benefits, and not necessarily based on any ethical conduct or calculation of resulting cost transferred onto others.

For simplicity, this article solely considers misaligned incentives tied to some aspects of the relation between two extant public institutions, viz. minimum wages and permanent disablement coverage. It points out how at present, for some sectors, the simultaneous public provision of a minimum wage and permanent disablement coverage increases moral hazard scope, suggesting that the full socioeconomic objectives of compensation are neither as efficient nor as equitable as commonly thought.

The argument considers matters from the perspective of workers' compensation. Moreover, it employs stylized facts, a common heuristic expedient in economics to abstract from

Table 1. Degree of permanent disablement[1]

Injury		Percentage of permanent disablement
Loss of two limbs		100
Loss of both hands, or of all fingers and both thumbs		100
Total loss of sight		100
Total paralysis		100
Injuries resulting in employee being permanently bedridden		100
Loss of arm at shoulder		65
Loss of arm between elbow and shoulder		65
Loss of arm at elbow		55
Loss of arm between wrist and elbow		55
Loss of hand at wrist		50
Loss of four fingers and thumb of one hand		50
Loss of four fingers		40
Loss of thumb:	Both phalanges	25
	One phalanx	15
Loss of index finger:	Three phalanges	10
	Two phalanges	8
	One phalanx	5
Loss of ring finger:	Three phalanges	8
	Two phalanges	6
	One phalanx	4
Loss of little finger:	Three phalanges	6
	Two phalanges	5
	One phalanx	3
Loss of metacarpals:	First, second or third (additional)	4
	Fourth or fifth (additional)	2
Loss of leg:	At hip	70
	Between knee and hip	45 to 70
	Below knee	35 to 45
Loss of toes:	All	15
	Big, both phalanges	7
	Big, one phalanx	3
	Toes other than big toes:	
	Four toes	7
	Three toes	5
	Two toes	3
	One toe	1
Loss of eye:	Whole eye	30
	Sight	30
	Sight except perception of light	30
Loss of hearing:	Both ears	50
	One ear	7

Note 1: Total permanent loss of the use of a limb shall be treated as the loss of the limb.
Note 2: Any injury to the left arm or hand and, in the case of a left-handed employee, to the right arm or hand, may in the discretion of the Director-General be rated at ninety percent of the above percentage.
Note 3: If there are two or more injuries the sum of the percentages for such injuries may be increased, in the discretion of the Director-General.

data trends to aid theoretical reasoning.[9-11] The stylized facts are two, in the main regard minimum and maximum benefits for permanent disablement and a sample of minimum wages, and are based on recent data that are openly available. The first stylized fact identifies the origin of the moral hazard of interest, while the second – which defines our principal concern – indicates why the scope of the moral hazard of interest widens as time goes by. Thus, our point about exacerbating misaligned incentives derives from institutional considerations, rather than from any moral hazard instance. We conclude, however, that not all may be lost, at least as regards the second fact: there are some policy options that are not in the main overly drastic, and that at the same time remind us about how important it is to perform careful institutional design.

2. COVERAGE FOR PERMANENT DISABLEMENT ACCORDING TO THE COIDA: SOME BASICS

Permanent disablement, which can range from 1% to 100%, means that an occupational injury or disease results in a permanent anatomical defect, loss of anatomical function or disfigurement that is tantamount to disablement for employment.[1] Permanent disablement thus can include total or partial loss of a limb, impairment of movement of a joint, loss of vision or hearing, restricted lung function, or loss of an organ. Table 1 reports degrees of permanent disablement.

Under the COIDA, compensation for permanent disablement is paid either in a lump-sum or as a monthly pension depending on the degree of disablement. Permanent

disablement assessed to be within the inclusive range from 1% to 30% is paid in the form of a lump-sum.[1] For the calculation of permanent disablement within this inclusive range, the upper limit of 30% acts as the yardstick for calculations of compensation for permanent disablement below it. For example, the lump-sum compensation for 30% permanent disablement is calculated at 15 times an employee's earnings as prescribed by the COIDA, subject to a prescribed maximum and minimum of such earnings. Thus, the lump-sum compensation in the event of permanent disablement at less than 30% is calculated pro rata to the lump-sum for 30%.

For permanent disablement assessed within the inclusive range from 1% to 30%, the 2009 minimum earnings threshold is R2790 per month and the maximum earnings threshold is R11 163 per month. If an employee earns less than the minimum earnings threshold, her compensation will be calculated using the minimum earnings figure rather than her own wage. Therefore, the minimum lump-sum compensation for 30% permanent disablement is R41850 (i.e., 15 × R2790).

To illustrate, consider the case of the permanent disablement from the loss of one ear. According to the COIDA guidelines reproduced in Table 1, this is a 7% permanent disablement that will yield the lump-sum compensation of [(7% × 100)/30)] × (15 × Monthly Gross Earnings). The generic calculation for permanent disablement up to 30% – where the monthly earnings are subject to the minimum and maximum prescribed by the COIDA – accordingly is,

[(% Disablement × 100)/30] × (15 × Monthly Gross Earnings),

where (% Disablement) is determined by Section 2 of the COIDA.

If the permanent disablement is assessed at 31% inclusive or more, then the employee will receive a monthly pension for life. Compensation for 100% permanent disablement is calculated at 75% of the employee's monthly earnings, again subject to a prescribed maximum and minimum of such earnings. The pension for permanent disablement, within the

Table 2. Minimum compensation threshold for 100% permanent disablement (2008-2009) and some minimum wages

Industry	Sub-sector	Occupation	COIDA pension (Rands 2009)	Minimum wage (Rands 2009)	Difference between COIDA pension and minimum wage (Percentage 2009)	COIDA pension (Rands 2008)	Minimum wage (Rands 2008)	Difference between COIDA pension and minimum wage (Percentage 2008)
Agriculture	–	Farm worker	2092.50	1316.69	-37	–	–	–
Community, social & personal services	Hair salon	General assistant	2092.50	1756.81	-16	1875.00	1611.76	-14
Construction	Building	Labourer/cleaner	2092.50	1920.44	-8	1875.00	1769.93	-6
Construction	Building	Labourer	2092.50	1998.73	-4	1875.00	1754.51	-6
Construction	Electrical	General worker	2092.50	1964.52	-6	1875.00	1688.05	-10
Construction	Building	General worker	2092.50	1434.96	-31	1875.00	1301.16	-31
Finance	Business services, Contract cleaning	Cleaner	2092.50	1658.17	-21	1875.00	1541.26	-18
Forestry	–	Employee	2092.50	1138.71	-46%	–	–	–
Manufacturing	Furniture, bedding & upholstery	Labourer	2092.50	1732.00	-17	1875.00	1732.00	-8
Manufacturing	Curtaining	General worker	2092.50	1635.31	-22	1875.00	1635.31	-13
Manufacturing	Curtaining	Labourer	2092.50	1580.00	-24	1875.00	1580.00	-16
Manufacturing	Wood	Labourer	2092.50	1505.00	-28	1875.00	1400.00	-25
Wholesale and retail trade	Restaurants, catering and allied trade	General assistant	2092.50	–	–	1875.00	1724.25	-8
Wholesale and retail trade	Restaurants, catering and allied trade	General assistant	2092.50	–	–	1875.00	1660.77	-11
Wholesale and retail trade	Retail trade	Forecourt attendant	2092.50	1660.12	-21	1875.00	1545.33	-18
Wholesale and retail trade	Meat	Cleaner	2092.50	1645.96	-21	1875.00	1496.19	-20
Wholesale and retail trade	Restaurants, catering and allied trade	General assistant	2092.50	–	–	1875.00	1399.02	-25
Average	–	–	2092.50	1639.10	-18	1875.00	1598.30	-15

Note 1: All compensations are increased annually, depending on Compensation Fund reserves available and not on changes of inflation. Minimum wages also increase annually but, unlike compensations, the increases follow inflation. The increases for both compensations and minimum wages are published in the Government Gazette.

Source: Compiled by the authors using other sources[12,14]

Table 3. CPI and minimum compensation pension figures

	2003	2004	2005	2006	2007	2008	2009	Average
Annual average CPI (%)	5.8	1.4	3.4	4.6	7.2	11.5	7.1	5.9
Permanent disablement COIDA minimum pension (Rands)	1019.25	1146.15	1224.00	1410.75	1626.75	1875.00	2092.50	–
Annual growth in permanent disablement COIDA minimum pension (%)	–	12.45	6.79	15.26	15.31	15.26	11.60	12.8

Note 1: The gazetted annual increase for minimum wages is CPI plus 1% or 2% depending on the sector.
Note 2: From 2009, the CPI figures were calculated using a new basket of goods and new weights.
Note 3: The CPI above is the average rate for the year (for illustrative purposes), whereas, in general, the CPI used for wage increases is the one available six weeks prior to the increase. Wages in different sectors are increased at different times of the year, e.g., forestry wages are increased in April each year while those in farming are increased in March each year.[12]

Source: Compiled by the authors using other sources[12,14-16]

inclusive range from 31% to 99%, will be calculated on a pro rata basis to the pension for 100% disablement.

For permanent disablement assessed at 31% inclusive or more, the 2009 minimum earnings threshold is R2790 per month and the maximum earnings threshold is R19 931 per month. If an employee earns less than the minimum earnings threshold, her compensation will be calculated using the minimum earnings rather than her own wage. Therefore, the minimum compensation pension for 100% permanent disablement is R2092.50 per month (i.e., R2790 × 75%). The maximum compensation pension for 100% permanent disablement is R14 948.25 (i.e., R19 931 × 75%). The compensation pension – where, once more, the monthly earnings are subject to the minimum and maximum prescribed by the COIDA – is calculated according to,

(% Disablement) × (Monthly Gross Earnings × 75%),

where (% Disablement) again is determined by Section 2 of the COIDA.[1]

3. TWO STYLIZED FACTS

Table 2 compares minimum wages in a number of occupations with the minimum compensation for 100% permanent disablement. The minimum compensation is R1875.00 for 2008 and R2092.50 for 2009; while the average minimum wage for jobs of all sectors is R2451.24 for 2008 and R2723.80 for 2009.[12] However, there is significant variation in the minimum wage amount for each individual sector.

Employees ("labourers") in the paper sector and in the petroleum manufacturing sectors received a minimum wage of between R4500 and R5000 in 2008 and 2009, i.e. more than double the minimum monthly pension payment from the COIDA. Because these wages are above the minimum threshold, in the event of 100% permanent disablement, these employees are eligible for 75% of their wage. On the other hand, employees in the wood manufacturing sector and in the construction industry ("general workers") only face a minimum monthly wage of between R1435 and R1505, which is up to 31% less than the monthly minimum pension they would receive from the COIDA. In the event of 100% permanent disablement, these employees are eligible for a monthly pension that is approximately 46% higher than their wage. Thus, we have a first stylized fact (SF):

SF1. In some instances, the minimum threshold for compensation for 100% permanent disablement exceeds gazetted minimum wages.

Additionally, as Table 2 further shows, the gap between compensation and minimum wages shows variation between sector and occupation, as well as from one year to another. In 2009, employees in construction earned 8% less than minimum compensation for permanent disablement under the COIDA, while a cleaner in wholesale and retail trade earned 21% less than the minimum compensation. Also, for employees in the manufacturing sector, the gap between compensation and minimum wage has grown from 2008 to 2009, meaning that the manufacturing employees are earning comparatively less each year as compared to the minimum compensation threshold.

Table 3 gives this observed gap broader context. It reports data over 2003–2009 on the Consumer Price Index (or CPI, the index used by economists to measure inflation, and according to which annual increases for minimum wages are determined), the Permanent Disablement COIDA Minimum Pension, and the change in the latter. Depending on sector, the minimum wages increase either at CPI + 1% (e.g., farm and forestry wages) or CPI + 2% (e.g., hospitality sector wages). Thus, Table 3 shows that over the relevant period and depending on sector, the average increase in minimum wages was approximately either 6.9% (i.e., average CPI + 1%) or 7.9% (i.e., average CPI + 2%). But from 2003 to 2009 the average increase to the minimum pension under the COIDA was 12.8%. Hence, minimum compensation pensions from permanent disablement, which are higher than some of the minimum wages, are also growing higher annually than the minimum wages. Therefore, the legislated compensation is out of line with at least a subset of minimum wages. While a longer time series would be useful to comment more fully, there still is a broad trend:

SF2. There is no convergence in the growth rates of permanent compensation benefits and of minimum wages.

4. DISCUSSION

In the concrete South African case, we can identify three scenarios.

(a) Within the inclusive minimum and maximum earnings threshold, the permanent disablement pension is 75% of gross earnings.
(b) If earnings are above the maximum earnings threshold, then the employee receives less than 75% of her gross earnings in the form of a permanent disablement pension.
(c) If earnings are below the minimum earnings threshold, then the employee receives more than 75% of her gross earnings in the form of a permanent disablement pension.

SF1 highlights that the minimum earnings threshold – (c) – is the weak link. For it is at this threshold that misaligned incentives kick in: in some employment categories, the employee can obtain a monthly disablement pension greater than her minimum wage. This discrepancy is exacerbated if one considers that minimum wage legislation is not always complied to: employees in many cases are receiving a wage lower than the legislated minimum.[13]

SF2 complicates matters. For it renders weak link (c) even weaker. SF2 enlarges moral hazard scope, namely it stimulates other incentives for intentional self-injury. The fact that the gap between compensation and wages keeps on getting larger and larger implies that the decision of intentionally injuring oneself keeps on getting more attractive as time goes on for the benefits of doing so are getting larger and larger. Hence, all else equal, the maximum benefit foregone of not intentionally injuring oneself increases with time.

Consider a forestry employee who earns R1138.71 per month. In 2009, to obtain a permanent disablement pension equivalent to her monthly wage she would have to inflict an injury of 55% permanent disablement (e.g., loss of arm between wrist and elbow). But if we consider the gap between compensation pensions and minimum wages and if wages and pensions continue to grow at their current rates, by 2015 our forestry employee will have to inflict an injury of 39% permanent disablement (e.g., loss of four fingers and thumb of one hand) to obtain a pension that is equivalent to her wage; by 2020, the self-injury would need to be of 30%; in 2025, 23%; in 2030, 18%; in 2035, 13%. If we consider the curtaining manufacturing sector the situation is not so different, where by 2035 the required self-injury would be 19%. The same holds for, e.g., agriculture, where in 2035 the figure would be 16%. And so on. (See Box 1 for the calculation formula.)

Recall now that a 30% and below injury is compensated only with a lump-sum payment. Eventually, the extent of self-injury for a minimum wage employee in any sector to obtain an equivalent permanent pension will reach the lowest limit for pension entitlement, namely 31% (e.g., the loss of a thumb and a little finger). Thus, as time goes by, the identified moral hazard scope, which is defined in tandem by the current institutions of compensation and minimum wage, increases.

5. POLICY CONSIDERATIONS

In order to reduce moral hazard scope – assuming one wants to maintain both compensation and minimum wages – minimum wages and compensation pensions need to be aligned. In hindsight, there seem to be two immediate policy options to correct the mismatch. If we approach the matter from the perspective that the minimum permanent disablement pension is too high, the first option is to decrease compensation in order for it to be in line with minimum wages. While simple, this policy option may cause social unrest as, e.g., individuals already receiving compensation may oppose it because they would be worse-off. The alternative is to approach the misalignment from the perspective that minimum wages are too low. From this perspective, the second policy option is to increase minimum wages to be in line with compensation. However, an outright increase in minimum wages to exactly meet compensation, though popular for the politician in the short run, would be too high a price to pay for all in the long run; e.g., it would arguably increase labour market distortions. Therefore, neither of these immediate policy solutions would be advisable.

One alternative to an immediate policy solution approach – still in keeping with the assumption that one wants to maintain both compensation and minimum wages – is to try to remedy the misalignment by narrowing the gap between minimum wages and minimum permanent disablement pensions gradually. If the minimum permanent disablement pension threshold is kept constant or increased at a lower rate as compared to the minimum wage rate increases, then the gap between the two will narrow over time. In fact, provided the minimum permanent disablement pension is increased at the same rate as inflation, then employees and those who receive such pensions will not be worse-off in terms of their purchasing power. Since minimum wages increase at a rate one or two percentage points higher than the inflation rate, this type of increase will ensure that minimum wages increase at a faster rate than the minimum permanent disablement pension. Thus the gap between the two will gradually close. Once the gap has closed, a provision – essentially a fairly inflexible rule that also obviates discretionary interventions – can be made to ensure that both the minimum compensation pension and minimum wages increase at the same rate.

Take note, however, that closing the gap will not eliminate moral hazard generally tied to compensation. Keeping everything else constant, the closure of the gap will only eliminate the exacerbation of the identified moral hazard through time. Thus, even if possibility (c) is eliminated, the mere presence of compensation, as implied, creates room for moral hazard. Still, it is believed that the benefit of having compensation outweighs the general moral hazard costs tied to it. As a result, the elimination of moral hazard requires a more resolute, if politically unpopular, policy.

BOX 1. FORMULA FOR GROWTH RATES

Using data from Tables 2 and 3, the calculations are based on the following formula, where the averages from Table 3 are proxies for growth rates:

$$\text{growth rate} = 100\times \frac{\text{minimum wage}(1+\text{growth rate of minimum wage})^{\text{year}-\text{base year}}}{\text{minimum compensation}(1+\text{growth rate of minimum compensation})^{\text{year}-\text{base year}}}$$

For example, if we consider agriculture (a "farmworker") in 2015 and recall that the growth rate of the minimum wage is average CPI + 1 we obtain,

$$\text{growth rate} = 100\times \frac{\text{R1316.69}\,(1+0.069)^{2015-2009}}{\text{R2092.50}\,(1+0.128)^{2015-2009}} = 45.6\%$$

6. CONCLUSION

The two public institutions of minimum wages and permanent disablement pensions define, in conjunction and for some employment categories, two related moral hazard problems. The first problem originates from a typical case of the left hand not knowing what the right one is doing – the COIDA[1] was not designed considering the already-existing institution of minimum wages. At the very least, this problem entails that the intended beneficial socio-economic effects of the two institutions in some instances may cancel each other out. The second problem, our main interest, originates from the widening gap between minimum wages and permanent disablement pensions. Since compensation pensions are increasing at a higher rate than minimum wages, the benefits from the last unit of intentional self-injury are increasingly outweighing their respective costs. However, from an economy-wide perspective – and of course this is the whole point – matters are different: employers (and society) not only pay too much to provide workers' compensation, but are doing so at a mounting pace. The responsibility shift is not free, and its excess burden increases every day.

LESSONS LEARNED

1. Economic analysis suggests that the combined social effects of the existing institutions of worker compensation and minimum wages increase moral hazard scope in South Africa.
2. An employee who receives a minimum wage faces an increasing incentive to trade-off her wage in favour of a permanent disablement pension.
3. The increasing scope of moral hazard poses serious cost implications for South African employers and, more generally, for society.
4. Policy recommendations in the form of bringing annual increases of worker compensation in line with inflation to reduce the scope of moral hazard are suggested.

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PEER REVIEWED

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[1] Sapienza – Università di Roma, Dipartimento analisi economiche e sociali
[2] Institutions and Political Economy Group (IPEG), School of Economic and Business Sciences, University of the Witwatersrand
[3] African Micro-economic Research Unit (AMERU), School of Economic and Business Sciences, University of the Witwatersrand

Correspondence: Ms Lyndal Keeton, Institutions and Political Economy Group (IPEG), School of Economic and Business Sciences, Private Bag X3, WITS 2050, Johannesburg, Republic of South Africa Tel: +27 (0)11 717 8065, Fax: +27 (0)11 717 8081, e-mail: Lyndal.Keeton@Wits.ac.za

Abstract

Viewing issues from the perspective of workers' compensation, the article highlights how for some South African sectors the simultaneous provision of a minimum wage and a permanent disablement coverage increases moral hazard scope. From an economy-wide perspective this increasing scope means that employers (and society) not only pay too much to provide workers' compensation, but are doing so at a mounting pace. The article considers some policy options that are overall not too drastic as regards the elimination of the increasing scope, and in so doing it also reminds us about the crucial importance of careful institutional design.

Key words: COIDA, minimum wages, moral hazard, public institutions, South Africa, workers' compensation

1. Introduction

Workers' compensation in South Africa is regulated by the Compensation for Occupational Injuries and Diseases Act of 1993 (COIDA).[1] Among other functions, the COIDA sets up a system of no-fault compensation for employees who are injured or contract diseases because of their job. More precisely, it establishes that, with few exceptions, an aggrieved party is entitled to compensation without the concurrent necessity to prove that any other party is at fault.[1,2]

It is well-known that the presence of workers' compensation creates excess burdens, or social inefficiencies, especially in the form of what economics terms moral hazard.[3-6] Moral hazard basically involves a shifting of responsibility: it occurs when an individual behaves differently according to whether or not she fully will bear the costs tied to the consequences of her actions. For example, if our home is insured against theft, then we may more often leave the windows ajar when we go to work, i.e. we are willing to incur a higher risk of theft as the insurance company will be responsible for the consequences of theft. When there are misaligned incentives between the insured and the insurer, because some of the actions of the insured – such as leaving the windows ajar – are hidden to the insurer, we have room for moral hazard. With workers' compensation – itself a form of insurance – matters are not much different. Classic moral hazard examples in this case include an employee taking less care on the job (e.g., not always wearing rubber gloves or safety goggles when required), reporting a permanent disablement that is not causally related to the job (e.g., she could report a domestic accident as a work accident), and an employee intentionally injuring herself.[7,8] The bottom line is that moral hazard is one reflection of what economics terms rational behaviour – namely that an individual usually opts for what's best for her based on the evaluation of personal relative costs and benefits, and not necessarily based on any ethical conduct or calculation of resulting cost transferred onto others.

For simplicity, this article solely considers misaligned incentives tied to some aspects of the relation between two extant public institutions, viz. minimum wages and permanent disablement coverage. It points out how at present, for some sectors, the simultaneous public provision of a minimum wage and permanent disablement coverage increases moral hazard scope, suggesting that the full socioeconomic objectives of compensation are neither as efficient nor as equitable as commonly thought.

The argument considers matters from the perspective of workers' compensation. Moreover, it employs stylized facts, a common heuristic expedient in economics to abstract from data trends to aid theoretical reasoning.[9-11] The stylized facts are two, in the main regard minimum and maximum benefits for permanent disablement and a sample of minimum wages, and are based on recent data that are openly available. The first stylized fact identifies the origin of the moral hazard of interest, while the second – which defines our principal concern – indicates why the scope of the moral hazard of interest widens as time goes by. Thus, our point about exacerbating misaligned incentives derives from institutional considerations, rather than from any moral hazard instance. We conclude, however, that not all may be lost, at least as regards the second fact: there are some policy options that are not in the main overly drastic, and that at the same time remind us about how important it is to perform careful institutional design.

2. Coverage for permanent disablement according to the COIDA: Some basics

Permanent disablement, which can range from 1% to 100%, means that an occupational injury or disease results in a permanent anatomical defect, loss of anatomical function or disfigurement that is tantamount to disablement for employment.[1] Permanent disablement thus can include total or partial loss of a limb, impairment of movement of a joint, loss of vision or hearing, restricted lung function, or loss of an organ. Table 1 reports degrees of permanent disablement.

Under the COIDA, compensation for permanent disablement is paid either in a lump-sum or as a monthly pension

threshold is R2790 per month and the maximum earnings threshold is R11 163 per month. If an employee earns less than the minimum earnings threshold, her compensation will be calculated using the minimum earnings figure rather than her own wage. Therefore, the minimum lump-sum compensation for 30% permanent disablement is R41850 (i.e., 15 × R2790).

To illustrate, consider the case of the permanent disablement from the loss of one ear. According to the COIDA guidelines reproduced in Table 1, this is a 7% permanent disablement that will yield the lump-sum compensation of [(7% × 100)/30)] × (15 × Monthly Gross Earnings). The generic calculation for permanent disablement up to 30% – where the monthly earnings are subject to the minimum and maximum prescribed by the COIDA – accordingly is,

[(% Disablement × 100)/30] × (15 × Monthly Gross Earnings),

where (% Disablement) is determined by Section 2 of the COIDA.

If the permanent disablement is assessed at 31% inclusive or more, then the employee will receive a monthly pension for life. Compensation for 100% permanent disablement is calculated at 75% of the employee's monthly earnings, again subject to a prescribed maximum and minimum of such earnings. The pension for permanent disablement, within the inclusive range from 31% to 99%, will be calculated on a pro rata basis to the pension for 100% disablement.

For permanent disablement assessed at 31% inclusive or more, the 2009 minimum earnings threshold is R2790 per month and the maximum earnings threshold is R19 931 per month. If an employee earns less than the minimum earnings threshold, her compensation will be calculated using the minimum earnings rather than her own wage. Therefore, the minimum compensation pension for 100% permanent disablement is R2092.50 per month (i.e., R2790 × 75%). The maximum compensation pension for 100% permanent disablement is R14 948.25 (i.e., R19 931 × 75%). The compensation pension – where, once more, the monthly earnings are subject to the minimum and maximum prescribed by the COIDA – is calculated according to,

(% Disablement) × (Monthly Gross Earnings × 75%), where (% Disablement) again is determined by Section 2 of the COIDA.[1]

3. Two stylized facts

Table 2 compares minimum wages in a number of occupations with the minimum compensation for 100% permanent disablement. The minimum compensation is R1875.00 for 2008 and R2092.50 for 2009; while the average minimum wage for jobs of all sectors is R2451.24 for 2008 and R2723.80 for 2009.[12] However, there is significant variation in the minimum wage amount for each individual sector.

Employees ("labourers") in the paper sector and in the petroleum manufacturing sectors received a minimum wage of between R4500 and R5000 in 2008 and 2009, i.e. more than double the minimum monthly pension payment from the COIDA. Because these wages are above the minimum threshold, in the event of 100% permanent disablement, these employees are eligible for 75% of their wage. On the other hand, employees in the wood manufacturing sector and in the construction industry ("general workers") only face a minimum monthly wage of between R1435 and R1505, which is up to 31% less than the monthly minimum pension they would receive from the COIDA. In the event of 100% permanent disablement, these employees are eligible for a monthly pension that is approximately 46% higher than their wage. Thus, we have a first stylized fact (SF):

SF1. In some instances, the minimum threshold for compensation for 100% permanent disablement exceeds gazetted minimum wages.

Additionally, as Table 2 further shows, the gap between compensation and minimum wages shows variation between sector and occupation, as well as from one year to another. In 2009, employees in construction earned 8% less than minimum compensation for permanent disablement under the COIDA, while a cleaner in wholesale and retail trade earned 21% less than the minimum compensation. Also, for employees in the manufacturing sector, the gap between compensation and minimum wage has grown from 2008 to 2009, meaning that the manufacturing employees are earning comparatively less each year as compared to the minimum compensation threshold.

Table 3 gives this observed gap broader context. It reports data over 2003–2009 on the Consumer Price Index (or CPI, the index used by economists to measure inflation, and according to which annual increases for minimum wages are determined), the Permanent Disablement COIDA Minimum Pension, and the change in the latter. Depending on sector, the minimum wages increase either at CPI + 1% (e.g., farm and forestry wages) or CPI + 2% (e.g., hospitality sector wages). Thus, Table 3 shows that over the relevant period and depending on sector, the average increase in minimum wages was approximately either 6.9% (i.e., average CPI + 1%) or 7.9% (i.e., average CPI + 2%). But from 2003 to 2009 the average increase to the minimum pension under the COIDA was 12.8%. Hence, minimum compensation pensions from permanent disablement, which are higher than some of the minimum wages, are also growing higher annually than the minimum wages. Therefore, the legislated compensation is out of line with at least a subset of minimum wages. While a longer time series would be useful to comment more fully, there still is a broad trend:

SF2. There is no convergence in the growth rates of permanent compensation benefits and of minimum wages.

4. Discussion

In the concrete South African case, we can identify three scenarios.

(a) Within the inclusive minimum and maximum earnings threshold, the permanent disablement pension is 75% of gross earnings.

(b) If earnings are above the maximum earnings threshold, then the employee receives less than 75% of her gross earnings in the form of a permanent disablement pension.

(c) If earnings are below the minimum earnings threshold, then the employee receives more than 75% of her gross earnings in the form of a permanent disablement pension.

SF1 highlights that the minimum earnings threshold – (c) – is the weak link. For it is at this threshold that misaligned incentives kick in: in some employment categories, the employee can obtain a monthly disablement pension greater than her minimum wage. This discrepancy is exacerbated if one considers that minimum wage legislation is not always complied to: employees in many cases are receiving a wage lower than the legislated minimum.[13]

SF2 complicates matters. For it renders weak link (c) even weaker. SF2 enlarges moral hazard scope, namely it stimulates other incentives for intentional self-injury. The fact that the gap between compensation and wages keeps on getting larger and larger implies that the decision of intentionally injuring oneself keeps on getting more attractive

18%; in 2035, 13%. If we consider the curtaining manufacturing sector the situation is not so different, where by 2035 the required self-injury would be 19%. The same holds for, e.g., agriculture, where in 2035 the figure would be 16%. And so on. (See Box 1 for the calculation formula.)

Recall now that a 30% and below injury is compensated only with a lump-sum payment. Eventually, the extent of self-injury for a minimum wage employee in any sector to obtain an equivalent permanent pension will reach the lowest limit for pension entitlement, namely 31% (e.g., the loss of a thumb and a little finger). Thus, as time goes by, the identified moral hazard scope, which is defined in tandem by the current institutions of compensation and minimum wage, increases.

5. Policy considerations

In order to reduce moral hazard scope – assuming one wants to maintain both compensation and minimum wages – minimum wages and compensation pensions need to be aligned. In hindsight, there seem to be two immediate policy options to correct the mismatch. If we approach the matter from the perspective that the minimum permanent disablement pension is too high, the first option is to decrease compensation in order for it to be in line with minimum wages. While simple, this policy option may cause social unrest as, e.g., individuals already receiving compensation may oppose it because they would be worse-off. The alternative is to approach the misalignment from the perspective that minimum wages are too low. From this perspective, the second policy option is to increase minimum wages to be in line with compensation. However, an outright increase in minimum wages to exactly meet compensation, though popular for the politician in the short run, would be too high a price to pay for all in the long run; e.g., it would arguably increase labour market distortions. Therefore, neither of these immediate policy solutions would be advisable.

One alternative to an immediate policy solution approach – still in keeping with the assumption that one wants to maintain both compensation and minimum wages – is to try to remedy the misalignment by narrowing the gap between minimum wages and minimum permanent disablement pensions gradually. If the minimum permanent disablement pension threshold is kept constant or increased at a lower rate as compared to the minimum wage rate increases, then the gap between the two will narrow over time. In fact, provided the minimum permanent disablement pension is increased at the same rate as inflation, then employees and those who receive such pensions will not be worse-off in terms of their purchasing power. Since minimum wages increase at a rate one or two percentage points higher than the inflation rate, this type of increase will ensure that minimum wages increase at a faster rate than the minimum permanent disablement pension. Thus the gap between the two will gradually close. Once the gap has closed, a provision – essentially a fairly inflexible rule that also obviates discretionary interventions – can be made to ensure that both the minimum compensation pension and minimum wages increase at the same rate.

Take note, however, that closing the gap will not eliminate moral hazard generally tied to compensation. Keeping everything else constant, the closure of the gap will only eliminate the exacerbation of the identified moral hazard through time. Thus, even if possibility (c) is eliminated, the mere presence of compensation, as implied, creates room for moral hazard. Still, it is believed that the benefit of having compensation outweighs the general moral hazard costs tied to it. As a result, the elimination of moral hazard requires a more resolute, if politically unpopular, policy.

6. Conclusion

The two public institutions of minimum wages and permanent disablement pensions define, in conjunction and for some employment categories, two related moral hazard problems. The first problem originates from a typical case of the left hand not knowing what the right one is doing – the COIDA[1] was not designed considering the already-existing institution of minimum wages. At the very least, this problem entails that the intended beneficial socioeconomic effects of the two institutions in some instances may cancel each other out. The second problem, our main interest, originates from the widening gap between minimum wages and permanent disablement pensions. Since compensation pensions are increasing at a higher rate than minimum wages, the benefits from the last unit of intentional self-injury are increasingly outweighing their respective costs. However, from an economy-wide perspective – and of course this is the whole point – matters are different: employers (and society) not only pay too much to provide workers' compensation, but are doing so at a mounting pace. The responsibility shift is not free, and its excess burden increases every day.

Lessons Learned

1. Economic analysis suggests that the combined social effects of the existing institutions of worker compensation and minimum wages increase moral hazard scope in South Africa.
2. An employee who receives a minimum wage faces an increasing incentive to trade-off her wage in favour of a permanent disablement pension.
3. The increasing scope of moral hazard poses serious cost implications for South African employers and, more generally, for society.
4. Policy recommendations in the form of bringing annual increases of worker compensation in line with inflation to reduce the scope of moral hazard are suggested.

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