

# The financing need for providing paid maternity leave in the informal sector in Indonesia

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## Research

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40

## 41 **Abstract**

### 42 *Background*

43 The economic cost of not breastfeeding in Indonesia is estimated at US\$1.5–9.4 billion annually  
44 (Walters *et al*, 2016; Siregar *et al*, 2018; Walters *et al*, 2019), the highest in South East Asia. Half of the  
45 33.6 million working women of reproductive age (WRA) in Indonesia are informal employees, and  
46 less than 50% exclusive breastfeed. No maternity protection entitlements are currently available for  
47 WRA working informally in Indonesia. This study aims to estimate the cost of providing maternity  
48 leave cash transfer (MCT) for WRA working in the informal sector in Indonesia.

49

### 50 *Method*

51 The costing methodology used is the adapted version of the World Bank methodology by Vilar-  
52 Compte *et al* (2019), following pre-set steps to estimate costs using national secondary data. We used  
53 the 2018 Indonesian National Socio-Economic Survey to estimate the number of women working  
54 informally who gave birth within the last year. The population covered, potential cash transfer's unitary  
55 cost, the incremental coverage of the policy in terms of time and coverage, and the administrative  
56 costs were used to estimate the cost of MCT for the informal sector.

57

### 58 *Result*

59 At 100% coverage for 13 weeks of leave, the annual cost of MCT ranged from US\$175million  
60 (US\$152/woman) to US\$669million (US\$583/woman). The share of the annual costs did not exceed  
61 0.5% of Indonesian Gross Domestic Product (GDP).

62 *Conclusion*

63 The yearly cost of providing MCT for eligible WRA working in the informal sector is significantly  
64 lower than the current annual cost of not breastfeeding in Indonesia, as computed in previous work  
65 (Walters *et al*, 2016; Siregar *et al*, 2018; Walters *et al*, 2019). While such a program would be perceived  
66 as a marked increase from current public health spending at the onset, such an investment could  
67 substantially contribute to the success of breastfeeding and substantial corresponding public health  
68 savings given that more than half of working Indonesian WRA are employed in the informal sector.  
69 Such policies should be further explored while taking into consideration realistic budget constraints  
70 and implementation capacity.

71  
72 Keywords: Informal sector, breastfeeding, maternity protection, maternity leave, costing, maternity  
73 cash transfer, Indonesia

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86 **Background**

87 Exclusive breastfeeding (EBF) is defined as the proportion of infants 0 – 5 months of age who  
88 received only breastmilk [1]. Around half of all Indonesian children under six months were not  
89 exclusively breastfed in 2017 [2]. While this figure meets the Global Nutrition Target of 50% EBF by  
90 2025 [3], much is required to maintain and/or increase this proportion. The economic cost of not  
91 breastfeeding in Indonesia is estimated to be as high as US\$1.5 – 9.4 billion annually, the highest in  
92 South East Asia [4–6].

93

94 Maternity protection policies that include paid maternity leave are crucial to ensure the health of  
95 mothers and children and that women meet their breastfeeding goals [7–12]. Maternity protection  
96 allows mothers to be economically active while ensuring the safety and success of their pregnancy,  
97 and caregiving of their children, including breastfeeding [13]. Maternity leave itself is associated with  
98 higher rates of breastfeeding in low- and middle-income countries, and provide broad social,  
99 developmental, and health benefits for working mothers and newborns, as well as promote gender  
100 equity. Such benefits include alleviating the costs of sickness, cognitive losses and deaths due to not  
101 breastfeeding [4–6,14]. Providing maternity leave entitlement for working women may also be useful  
102 to improve maternal-child physical and mental health and family wellbeing, and also to potentially  
103 increase women’s participation in the labour market [8,11,12,15,16].

104

105 About half of women in Indonesia are in the workforce [17], thus it is crucial to develop policies to  
106 ensure that employed mothers are able to provide essential nurturing care in the first six months of a  
107 child’s life without sacrificing both income and employment opportunities. Some 48% of  
108 approximately 70 million women of reproductive age (WRA) in Indonesia are in the labor force.  
109 Among this population, 52% are informal employees [18]. According to the National Labor Survey

110 (SAKERNAS) Interviewer Guide, women can be classified as working in the informal sector if they  
111 are working as casual workers or if they are self-employed and assisted with unpaid worker(s) [19].  
112 Unfortunately, less than 50% of WRA in Indonesia who work in the informal sector practice exclusive  
113 breastfeeding [20,21].

114

115 Currently, maternity protection entitlements are not available for WRA working informally in  
116 Indonesia, calling for a reform in the current policies supporting breastfeeding [22]. However, efforts  
117 to scale-up breastfeeding support for women working in the informal sector in Indonesia have been,  
118 to some extent, covered by the existing social protection program called Family Hope Program  
119 (*Program Keluarga Harapan*/PKH) scheme [23,24]. This conditional cash transfer program provides a  
120 flat-rate cash transfer for the 20% poorest families with students, pregnant women or disabled family  
121 members. For a pregnant woman to participate in the program she must attend four antenatal  
122 checkups and consume iron tablets during her pregnancy, be assisted by a trained professional birth  
123 attendant during delivery, and have two post-natal care visits [25]. These measures may indirectly  
124 contribute to improving breastfeeding.

125

126 Previous studies in Indonesia have shown that the annual cost of not breastfeeding is enormous [4–  
127 6] and outweighs the cost of paid maternity leave within the formal sector [26]. As women in low and  
128 middle income countries (including Indonesia) are more likely to work in the informal sector [27] and  
129 mostly are uncovered by maternity leave policies [28], paid maternity leave policies within the informal  
130 sector would potentially result in larger benefits both economically and non-economically than within  
131 the formal sector. Unfortunately, providing paid maternity leave to informal workers is still a challenge  
132 globally [28]. In Indonesia, the International Labour Organization (ILO) coverage classification put  
133 Indonesia in the 10 to 32% range [7], showing that the coverage even in the formal sector is not yet

134 optimal. One of the disincentives of providing paid maternity leave is perceived or actual financial  
135 cost by employers [26,29]. Therefore, it is imperative to estimate the financial need of providing  
136 maternity protection entitlements within the informal sector for advocacy purposes to create the will  
137 among decisionmakers to develop policies and programs to provide maternity benefits to women  
138 employed in the informal sector [30,31].

139  
140 This study aims to estimate the cost of providing a maternity leave cash transfer (MCT) for WRA who  
141 work informally in Indonesia. Such studies are lacking in Indonesia and in other low- and middle-  
142 income countries all over the globe [32–36]. This study is the first to provide such estimates for  
143 Indonesia, and as such can provide urgently needed evidence for policy making purposes in the  
144 context of supporting recommended breastfeeding practices, especially given the relatively low health  
145 budget in Indonesia (under 5% share of GDP as of 2014) [37]. This study follows on our previous  
146 research on the cost to expand maternity protection for the formal sector [26] and begins to fill the  
147 gap in cost estimates for informal sector maternity benefits.

148

## 149 **Methods**

150 The costing methodology used is the adapted version of the World Bank methodology by Vilar-  
151 Compte *et al* [27], following pre-set steps to estimate costs using nationally secondary data. The  
152 following formula was used in the study:

$$153 \quad MCT_y = ((\alpha * Pop_y) * UC_{CT} * IC_y) + AdmC_y$$

154 Where:

155  $MCT_y$  : the MCT annual cost for a given year of intervention

156  $\alpha$  : probability of WRA giving birth in year  $y$

157  $\alpha \times Pop_y$  : population of women of reproductive ages (i.e. 18 – 49 years of age) in year  $y$  weighted

158 by  $\alpha$   
159  $UC_{CT}$  : unit cost of the CT  
160  $IC_y$  : incremental coverage (IC) of MCT assumed for a year  $y$   
161  $AdmC_y$  : administration cost in year  $y$

162  
163 We used the 2018 Indonesian National Socio-Economic Survey (SUSENAS) [18], an annual nationally  
164 representative survey able to provide population level estimates using provided weights. SUSENAS is  
165 the largest socioeconomic survey, typically comprising nationally representative samples of 200,000  
166 households [38]. SUSENAS includes general information and personal characteristics of respondents,  
167 as well as the variables used to determine fertility and the type of labor (i.e. formal vs. informal). In  
168 line with our study, SUSENAS enables us to estimate the number of women working informally who  
169 gave birth within the last year.

170  
171 To calculate the costs in this study, the previous formula was applied through the following steps:  
172 • *Step 1:* We computed the number of women who work informally and gave birth in the prior year,  
173 given a vector of individual characteristics (we provided more detailed explanation of the  
174 definition of informal sector as well as rural/urban in Additional File 1). Instead of an overall  
175 population estimate, it is recommended to separate the population in subgroups with different  
176 fecundity and participation in the informal sector to obtain a more accurate estimate of the target  
177 population for a given year. We separated the number of WRA working in the informal sector  
178 into several subgroups, namely age (15 – 19, 20 – 24, 25 – 29, 30 – 34, 35 – 39, 40 – 44, 45 – 49),  
179 education (no education, primary education, junior high school, senior high school, diploma, and  
180 university), marital status (single, married, divorced, widow), locality (urban, rural), and gave birth  
181 in the last one year, resulting in 308 subgroups (e.g. an example of a subgroup: the number of

182 women working informally, aged 15 – 19, no education, single, live in urban area, gave birth in  
183 the last one year). SUSENAS provides data on giving birth within the last two years, thus we  
184 divided the number by two for each of the subgroups to reflect the number of WRA who gave  
185 birth within the last one year.

186 • *Step 2:* We then calculated the percentage of WRA working informally who gave birth in the prior  
187 year per subgroup as a share of the total WRA working informally (i.e. the number of WRA  
188 working informally who gave birth in the last one year in a subgroup/the total number of WRA  
189 working informally) to estimate  $\alpha$ . For each subgroup,  $\alpha$  was defined as the probability of WRA  
190 working informally who gave birth in the last year within each of the subgroup, resulting in 308  
191 different values for  $\alpha$ .

192 • *Step 3:* We determined a realistic estimate of beneficiaries who may claim maternity leave in the  
193 informal sector in a given year by weighting the population of WRA employed in the informal  
194 sector by  $\alpha$  (i.e. probability of having a child in a given year).  $Pop_y$  or WRA data at the population  
195 level were obtained from World Bank estimate [39], adjusted by the percentage of female labor  
196 participation rate and adjusted further by WRA who work informally using SUSENAS data [18].  
197  $Pop_y$  was then multiplied by  $\alpha$  of the respective subgroups to determine the number of WRA who  
198 work informally and gave birth within the prior year ( $\alpha * Pop_y$ ).

199 • *Step 4:* The unit cost data (UC) was proxied by, first, minimum wage data (average minimum wage  
200 derived from various documents at the provincial level depicting respective minimum wage);  
201 second, unit cost of a cash transfer program called Family Hope Program (PKH) [40,41]; and  
202 third, the poverty line (derived from World Bank report) [42]. UC was multiplied by results from  
203 step 3:  $(\alpha * Pop_y) * UC_{CT}$ .

- 204 • *Step 5:* Incremental coverage (IC) was determined based on regulations, recommendations, and  
 205 literature regarding the length of leave and coverage. The length of leave used in this study started  
 206 from the application of the current Indonesian law of 13 weeks maternity leave (approximately 3  
 207 months leave) [22], and increased to 14 (minimum requirement of ILO) [43], 18 (extension  
 208 according to ILO) [44], and 26 weeks (WHO recommendation) [3]. We also used two coverage  
 209 scenarios of WRA working informally eligible for maternity leave, namely 21% (a midrange value  
 210 from the ILO coverage classification placing Indonesia in the 10 to 32% level) [7] and 100%.  
 211 These were then multiplied by step 4:  $(\alpha * Pop_y) * UC_{CT} * IC$ .
- 212 • *Step 6:* As this type of cash transfer (CT) would be new, the administrative cost needs to be added.  
 213 Administrative cost ( $AdmC_y$ ) was derived based on a previous study of the national Family Hope  
 214 Program (PKH), managed by The Ministry of Social Affairs. The program provides the lowest  
 215 20% income household group with conditional cash transfers (CCT) to increase their family  
 216 member to health and education facilities. We believe this program approximates the simulated  
 217 MCT in our study for women working informally, since no actual MCT programs for women  
 218 working informally exist. The administration cost of PKH is deemed moderate and the program  
 219 has a better administrative and management structure compared to other CCT programs in  
 220 Indonesia. The share of PKH administrative cost (14% in 2009) is closer to other mature CCT  
 221 programs in other countries (around 8%) [25,45–49]. In monetary terms, the average  
 222 administrative costs per household beneficiaries in 2010 was about US\$24 [25]. We converted this  
 223 value into 2018 value using Consumer Price Index obtained from World Bank data [50] resulting  
 224 in a fixed cost of US\$35 per person. To calculate the total administrative cost, the fixed cost per  
 225 person was multiplied by  $(\alpha * Pop_y)$ :  $US\$35 * (\alpha * Pop_y) = AdmC_y$ . Using this cost, the  
 226 percent of our administrative cost as compared to the total cost falls between 5 – 36% (Table 3),  
 227 depending on the UC used in the calculation. Our administrative cost per woman and its share

228 out of the total cost is higher than that of Mexico, but comparable to the study conducted in the  
229 Philippines [27,51].

230  
231 The administrative cost ( $AdmC_y$ ) was added to the total cost obtained from step 5 to yield the total  
232 cost of providing cash transfers to WRA working informally. The cost per women was calculated by  
233 dividing the total cost by the estimated number of women expected to receive maternity leave. The  
234 details of the assumptions used for our calculations are provided in Table 1. All costs were converted  
235 to USD using the 2019 reference exchange rate from Bank of Indonesia [52].

236

## 237 **Results**

238 Table 2 presents the characteristics of WRA in Indonesia who work informally and gave birth, using  
239 SUSENAS data. As many as 71.1 million females were categorized as WRA, and of this amount  
240 50.17% were working, and among those, 59.11% were working informally. Of WRA working  
241 informally, 5.43% gave birth within the last one year. Based on the calculation of coverage (21% and  
242 100%, table 1) multiplied by the number of informally working women, there are 240,913 (21%  
243 coverage) and 1,147,204 (100% coverage) women who would be potentially eligible to receive the  
244 MCT program.

245

### 246 *The annual financing need for MCT in informal sector*

247 Table 3 provides the cost calculation based on the formula presented in the methods section using the  
248 different unit costs, at 21% and 100% coverage. The table showing the costs per province is presented  
249 in Appendix A. Understandably, the highest total costs are associated with the total cost based on the  
250 minimum wage and the unit cost of MCT per month, the greatest unit cost. The administrative cost  
251 (similar for all three UCs) was added to each of the four different UCs to estimate the total cost of

252 MCT for eligible informally working WRA. At 100% coverage, the total cost calculated by using  
253 minimum wage, 2/3 minimum wage, cash transfer, and poverty line as the UC for 13 weeks amounted  
254 to around US\$634million (US\$553/woman), US\$436million (US\$380/woman), US\$669million  
255 (US\$583/woman), and US\$175million (US\$152/woman), respectively. The costs at 21% coverage for  
256 any length of maternity leave are 5 times lower than the estimates at 100% coverage. Although the  
257 cost per woman could be about 11 times higher than the health expenditure per capita in Indonesia  
258 in 2014 (adjusted to 2018 value), the estimate did not exceed 0.5% of 2018 nominal GDP [54], [37,50].  
259

259

## 260 **Discussion**

261 This study estimates the yearly financing need for providing an MCT in the informal sector. The  
262 annual cost of providing an MCT for all WRA working informally ranges from US\$175 million  
263 (US\$152/woman) to US\$1.3 billion (US\$1,131/woman) depending on the UC applied. At 100%  
264 coverage, the total cost of providing MCT for WRA working informally is much higher than the  
265 existing CT program (PKH). As previously described, one of the aims of PKH program is to improve  
266 the maternal and child health and it is the closest type of existing CT program in Indonesia to our  
267 proposed MCT program. The annual cost of PKH adjusted to 2018 value is US\$209million, covering  
268 778,000 households in 2010 [25,50]. At 100% coverage, our MCT program total cost using CT as UC  
269 (for 13 weeks leave) amounts to around US\$669million and US\$1.3 billion (26 weeks leave). Using  
270 other UCs, except for the poverty line at 13 and 14 weeks, all total costs at 100% coverage are higher  
271 than PKH. At the lower coverage rate of 21% the cost is much lower (US\$140million for 13 weeks  
272 leave, using CT as UC), similar to the other total costs estimated by using other UCs at 21% coverage.  
273 As such, a trade off occurs between increasing coverage or producing a more feasible total  
274 expenditure.

275

276 The PKH is an established program producing positive results [24]. The introduction of MCT in the  
277 informal sector may require significant advocacy to convince policy makers of the importance of the  
278 transfer program to implement at 100% coverage for 26 weeks. Given budget constraints can be one  
279 of the obstacles for implementing maternity protection policies [26,37], the initial introduction of  
280 MCT for the informal sector could start at a lower cash transfer benefit level and/or coverage (i.e. 13  
281 weeks and/or 21% coverage), using a more moderate UC (i.e. poverty line or 2/3 minimum wage),  
282 and increase time/benefit provided, coverage, and UC gradually as implementation progresses.

283

284 We also found that our total cost estimates in all scenarios did not exceed 0.5% of Indonesia nominal  
285 GDP in 2018, a much lower percentage than the share of health expenditure on GDP. The cost per  
286 woman, however, could be around 11 times higher than the health expenditure per capita [37] and 8  
287 times higher than the cost of PKH per household [25]. Thus, although the total cost seems low in  
288 comparison to the total GDP, the cost per woman may not look appealing to policy makers. This can  
289 be challenging since budget availability has already been recognized as one of the issues faced in  
290 optimizing the more established paid maternity leave policy for the formal sector [26]. As MCT  
291 policies for informal workers currently do not exist, this challenge will require proper program and  
292 financial planning as well as support from the government and relevant stakeholders since even now  
293 the local government struggles with allocating its budget to support the policy for the formal sector,  
294 let alone the informal sector. Additionally, even though the policies regulating maternity leave are  
295 available for the formal sector, its implementation is still not optimal [55–57]. This may prove to be a  
296 challenge for the informal sector to develop and implement MCT policy. If such policies are to be  
297 implemented, it should ensure that women are able to access MCT without facing the risk of  
298 discrimination due to the policy implementation [58,59].

299

300 One aspect that should be advocated to policy makers if MCT policies are to be optimally  
301 implemented for both formal and informal sectors is that the cost of not breastfeeding is much higher  
302 than the cost of implementing MCT policy. The cost of not breastfeeding in Indonesia includes the  
303 irreversible costs due to sickness and cognitive loss which may be higher than US\$1.5-9.4 billion  
304 annually, as well as the high annual level of maternal and infant deaths which may reach more than  
305 7,000 deaths [4–6]. These negative impacts of not breastfeeding should be a primary consideration in  
306 developing sound MCT policies for both the formal and informal sectors. Indeed paid parental leave  
307 has been shown to support meeting the Sustainable Development Goals (SDGs) outcomes such as  
308 lower infant mortality, increased exclusive breastfeeding rate, and better economic outcomes for  
309 women [12]. The total cost of both our estimate for informal sector, and the other estimate from  
310 previous study on formal sector [26] shows that the combined cost of providing MCT to eligible WRA  
311 in both the formal and informal sectors at 100% coverage based on minimum wage amount to be  
312 around US\$2 billion per year, roughly 4.5 times lower than the estimate of the cost of not breastfeeding  
313 in Indonesia. This indicates the value of investing in MCT, in addition to its benefits in terms of  
314 alleviating the costs of sickness, cognitive losses and deaths due to not breastfeeding and improve  
315 maternal-child physical and mental health and family wellbeing, and also to potentially increase  
316 women’s participation in the labour market [4–6,8,11,12,14–16,60].

317

318 As most working WRA in Indonesia are working in the informal sector, providing MCT to this group  
319 may reduce the cost of not breastfeeding in Indonesia by a large number. Other barriers to providing  
320 effective maternity protection policies such as strong breastmilk substitutes marketing, government  
321 budget constraints, perceived or actual financial cost by employers (thus reducing their profits),  
322 absenteeism, lack of information on and support for maternity protection, lack of workplace lactation

323 rooms, socio-cultural factors (e.g. the need to introduce complementary food early) [26,29] should  
324 also be addressed adequately to ensure the success of any maternity protection policies [31].

325

326 This study has a few limitations. First, the type of cash transfer program (PKH) used for the cash  
327 transfer UC is not a perfect comparison for assessing the idea of providing maternity leave CT to  
328 informally working WRA. PKH is targeted at the families in the 20% lowest income bracket, with,  
329 among others, pregnant women as a family member. However, this was our only modeling option as  
330 currently this is the only cash transfer program that targets family with pregnant women to promote  
331 maternal health for the poor. In addition, we used alternative operationalizations of UC to anticipate  
332 for costs differences. Second, our study draws on national level data which may not accurately  
333 represent unique local characteristics. This is quite important since regions across the Indonesian  
334 archipelago have diverse characteristics which may result in different estimates of costs for maternity  
335 protection policies (e.g. higher MCT due to the need to pay for a more expensive transport mode to  
336 reach a health facility). Thus, future studies may explore sub-national costs and breastfeeding practices  
337 and develop a more locally representative result as a basis for a local maternity protection policy. Also,  
338 since our study only focuses on Indonesia, a comparative study with other countries with roughly  
339 similar settings would be useful for comparison to develop a more comprehensive cost analysis. Last,  
340 the administrative costs are a rough estimate that may have biases. As more countries implement such  
341 maternity leave CT, better estimations should be available in the future.

342

### 343 **Conclusion**

344 The yearly cost of providing MCT for eligible WRA working in the informal sector is significantly  
345 lower than the current annual cost of not breastfeeding in Indonesia, as computed in previous work  
346 [4-6]. While this program would represent a marked increase in current public health spending at the

347 onset, the total cost estimates in all scenarios are less than 0.5% of the country's 2018 nominal GDP.  
348 More than half of working Indonesian WRA are employed in the informal sector, thus an MCT  
349 program targeting this sector could have substantial impact on breastfeeding rates in the country.  
350 These policies have the potential to contribute to the success of breastfeeding and as a result help  
351 avoid some infant and mother deaths and improve health, social, and economic sectors. However,  
352 challenges such as budget constraints and less than optimal policy implementation must be addressed  
353 to devise an effective and realistic strategy for MCT implementation and enforcement based on sound  
354 implementation science methods [61].

355

### 356 **Abbreviations**

357 WRA: women of reproductive age; MCT: maternity leave cash transfer; GDP: Gross Domestic  
358 Product; EBF: Exclusive breastfeeding; PKH: *Program Keluarga Harapan*/Family Hope Program; ILO:  
359 International Labour Organization; UC: unit cost; IC: incremental Coverage; SUSENAS: *Survey Sosial*  
360 *Ekonomi Nasional*/National Socio-Economic Survey; CCT: conditional cash transfers; SDGs:  
361 Sustainable Development Goals

362

### 363 **Declarations**

#### 364 **Ethics approval and consent to participate**

365 Not applicable

366

#### 367 **Consent for publication**

368 Not applicable

369

370

371 **Availability of data and materials**

372 The SUSENAS data are available from Statistics Indonesia (BPS) repositories by request. All  
373 calculation data generated or analyzed during the current study are available from the  
374 corresponding author on reasonable request.

375

376 **Competing interests**

377 The authors declare that they have no competing interests.

378

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386 no agreement for follow-on funding based on results and all results of BBF must be made publicly  
387 available. The Family Larsson-Rosenquist Foundation is an independent foundation set up in 2013 by  
388 the Larsson family and it functions strictly in line with the Swiss law. The foundation pursues  
389 charitable objectives and acts completely independent from the companies it owns assets of. As such,  
390 no member of the board of the Family Larsson-Rosenquist foundation has a commercial role within  
391 the field of breastfeeding. The foundation owns the Olle Larsson Holding, which comprises several  
392 companies, including a property investment portfolio, and medical technology companies, such as  
393 Medela. Regardless of these assets, the foundation can receive funding from different sources.

394

395 **Authors' contributions**

396 AYMS examined data analysis result, led and finalized the writing process. PP and DH provided data  
397 analysis as well contributed to the writing of the manuscript. MVC, GTB, MM, DT, GC, and RPE  
398 developed the methodology and contributed to the writing. PZ, RPE, and RM provided critical  
399 intellectual feedback to help revise the manuscript and contributed to the writing. All authors have  
400 read and approved the final manuscript.

401

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405

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563 **Tables**

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565 **Table 1. Assumptions and values used in the analysis**

Items	Value used in base scenario	Sources
Exchange rate (2019)	Rp 14,236/US\$	Bank of Indonesia [52]
Rate of cash benefit provided to employees by employers (%)	100	ILO [7]
Minimum wage per month (US\$)*	159.20 (39.80/week)	
2/3 of minimum wage per month (US\$)*	106.13 (26.53/week)	
Family Hope cash transfer per month [40,41]	168.59 (42.15/week)	
Poverty line per month (3.2US\$ PPP 2011 per day, converted into 2018 nominal value using PPP conversion of Rp5,341.5/US\$ and 2019 exchange rate)	36.02 (9.01/week)	The World Bank [42], Ministry of National Development Planning of Republic of Indonesia [53]
Number of WRA (15 – 49 years)	71,182,875	The World Bank [39]
Percentage of working WRA (%)	50.17	National Bureau of Statistics Indonesia [18]
Percentage of women working in informal sector (out of working WRA) (%)	59.11	National Bureau of Statistics Indonesia [18]
Potential coverage of women working in informal sector potentially eligible to receive paid maternity leave (%)	21 <sup>a</sup> and 100	ILO [7]
Length of maternity leave (weeks)	13, 14, 18 and 26	Ministry of Manpower and Transmigration of Republic of Indonesia [22], WHO [3]
Administration cost per female covered (US\$)**	35 (2018)	The World Bank [25]
Indonesian GDP 2018 (US\$)	1,042,173,300,000	The World Bank [54]

566 \*The wage reflects average provincial minimum wage, compiled from various provincial regulation documents; \*\*assumed to be similar  
567 to the Family Hope Program [25], adjusted to 2018 value using CPI of 147% (2010=100) [50]; <sup>a</sup>Mean of coverage in law of maternity  
568 leave [7].

569 This table shows all of the assumptions and values used in the calculation

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572 **Table 2. Characteristics of informally working WRA in Indonesia**

Variables	Categories	Work informally (%)*	Gave birth within the last year (%)*
Age group (years)	15-19	53.0	3.8
	20-24	37.9	9.9
	25-29	47.4	12.0
	30-34	57.4	9.1
	35-39	63.8	5.9
	40-44	68.0	2.3
	45-49	70.2	0.6
Education level	No education, kindergarten or incomplete elementary school	83.1	5.1
	Elementary school	79.1	4.4
	Junior high school	70.6	5.6
	Senior high school	51.1	6.4
	Vocational school	19.6	8.0
	University	12.5	8.7
Marital status	Single	32.8	0.0
	Married	64.8	6.4
	Divorced	52.0	2.8
	Widowed	68.4	1.5
Type of locality	Urban	41.8	5.2
	Rural	72.4	5.6

573 Source: SUSENAS 2018 [18], \*out of working WRA

574 This table shows the characteristics of WRA working informally using the SUSENAS data.

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583 **Table 3. The yearly financing need for MCT in informal sector**

Type of UC/% and length of coverage (weeks)	Number of WRA working informally covered	Cost of MCT (US\$)	Administrative cost (US\$)	Total cost (US\$)	% of GDP 2018 (nominal)	Cost per woman (US\$)
<i>100% coverage</i>						
Minimum wage						
13	1,147,204	593,551,960	40,390,767	633,942,726	0.061	553
14	1,147,204	639,209,803	40,390,767	679,600,569	0.065	592
18	1,147,204	821,841,175	40,390,767	862,231,942	0.083	752
26	1,147,204	1,187,103,919	40,390,767	1,227,494,686	0.118	1,070
2/3 minimum wage						
13	1,147,204	395,701,306	40,390,767	436,092,073	0.042	380
14	1,147,204	426,139,868	40,390,767	466,092,073	0.045	407
18	1,147,204	547,894,116	40,390,767	588,284,883	0.056	513
26	1,147,204	791,402,613	40,390,767	831,793,380	0.080	725
Cash transfer						
13	1,147,204	628,560,907	40,390,767	668,951,674	0.064	583
14	1,147,204	676,911,746	40,390,767	717,302,513	0.069	625
18	1,147,204	870,315,102	40,390,767	910,705,869	0.087	794
26	1,147,204	1,257,121,814	40,390,767	1,297,512,581	0.125	1,131
Poverty line						
13	1,147,204	134,298,323	40,390,767	174,689,090	0.017	152
14	1,147,204	144,628,964	40,390,767	185,019,731	0.018	161
18	1,147,204	185,951,525	40,390,767	226,342,292	0.022	197
26	1,147,204	268,596,647	40,390,767	308,987,414	0.030	269
<i>21% coverage</i>						
Minimum wage						
13	240,913	124,645,912	8,482,061	133,127,973	0.013	553
14	240,913	134,234,059	8,482,061	142,716,120	0.014	592
18	240,913	172,586,647	8,482,061	181,068,708	0.017	752
26	240,913	249,291,823	8,482,061	257,773,884	0.025	1,070
2/3 minimum wage						
13	240,913	83,097,274	8,482,061	91,579,335	0.009	380
14	240,913	89,489,372	8,482,061	97,971,433	0.009	407
18	240,913	115,057,764	8,482,061	123,539,826	0.012	513
26	240,913	166,194,549	8,482,061	174,676,610	0.017	725
Cash transfer						
13	240,913	131,997,790	8,482,061	140,479,852	0.013	583
14	240,913	142,151,467	8,482,061	150,633,528	0.014	625
18	240,913	182,766,171	8,482,061	191,248,233	0.018	794
26	240,913	263,995,581	8,482,061	272,477,642	0.026	1,131
Poverty line						
13	240,913	28,202,648	8,482,061	36,684,709	0.004	152
14	240,913	30,372,082	8,482,061	38,854,143	0.004	161
18	240,913	39,049,820	8,482,061	47,531,881	0.005	197
26	240,913	56,405,296	8,482,061	64,887,357	0.006	269

584 This table shows the costs calculation of financing MCT in informal sector per year

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586 **Additional files**

587 **Additional file 1. Definition of informal sector and rural/urban**

588 This description shows the definition of informal sector as well as the definition of rural/urban used  
589 in this study.

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

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