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Informal Transfers in Comparisons of Income Distributions: Lessons from Rich and Middle-Income Countries

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Lessons from Rich and Middle-Income Countries [1]

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Abstract

Developing countries rely more heavily on financial transfers between private households for economic welfare. Using data from three middle income and three high income countries in the Luxembourg Income Study Database, this paper examines the effects of such transfers on within country comparison of inequality. Deducting private transfer payments from disposable income increases inequality, but effects differ by the position of donor and receiving households in the distribution, by urban or rural location and by age of household members. We conclude that considering the role of private financial transfers is crucial to income inequality analysis.

Key words: measurement, methodology, inequality, income distribution

1. Introduction

This paper considers how to best measure income when comparing household monetary welfare across high income and middle-income countries. As economic development in countries such as China, Brazil, India and others brings them into comparisons of national living standards with many industrialised countries in the OECD and EU, it is crucial to adjust comparative methodology to reflect consistent measures of 'household monetary welfare'. One crucial difference is the role of transfers, both as a source of income and as a liability to households to fund them. While most industrial countries have developed formal welfare states with state-run and regulated transfers alongside formal income tax and social security liabilities; these fiscal structures are less developed in many middle-income countries, where informal transfers[2] between households play a bigger role. As data on both high and middle-income countries becomes more available, this paper addresses the question of how to adjust the measure for net disposable household income to be consistent across these different welfare state contexts? How does the comparison of countries differ, with what result for inequality comparisons and to comparisons of important sub-groups of the populations for whom informal transfers may be prominent: migrants-both international and between urban and rural areas within countries; and to 'dependent populations' of older people and children.

The importance of consistent and interpretable comparison of living standards, poverty, inequality and of the role of taxes and transfers in those measures is well established in a large and long-standing literature reporting redistributional impacts across high income countries (Akgun, Cournède, & Fournier, 2017; Eurostat, 2015; Joumard, Pisu, & Bloch, 2012) and, more recently, in 'developing countries (Inchauste & Lustig, 2017; Lustig, Pessino, & Scott, 2014).

This paper considers the role of 'informal inter-household transfers' when comparing international household economic welfare, and on inequality across high and middle-income countries. Studies indicates that inter-household income transfers have become an important part of income redistribution for disadvantaged households, particularly in developing countries (Bamberger, Kaufmann, & Velez, 2000; Cox, 2002). Informal inter-household transactions are the middle zone in which certain services and benefits could flow (Fafchamps, 2008), and play a crucial role in assisting the fight of households against poverty (Altonji, Hayashi, & Kotlikoff,

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[2] 'Informal transfers' and 'private transfers' are used interchangeably throughout the paper.

1995; Cox, 2002; McKenzie & Rapoport, 2007; Yang & Martinez, 2005) as well as also acting as a fundamental means for intergenerational transmission of wealth (Cox & Raines, 1985; Kotlikoff & Summers, 1981). Yet, some studies show the redistributional consequences can also exacerbate inequality because they disproportionately benefit the higher end of income distribution (Adams, Cuecuecha, & Page, 2008; Adams & Cuecuecha, 2010; Barham & Boucher, 1998; Paerregaard 2015). State transfers have a much smaller role in the overall household income sector compared to informal inter-household transfers and increase inequality (Evans et al., 2007). But it is wise to remember that the role for informal family support is far from being crowded out by the generous welfare states, as found in five developed countries (Künemund & Rein, 1999).

This paper's unique contribution addresses the gap in the discussion to date of informal transfers and their effect on monetary welfare by focusing on the issue across countries that are high and middle income: with the corresponding differences in the size of fiscal interventions in re-distribution. It is organized as follows: We begin by summarizing the background of our proposed alternative measure of disposable income and how the inter-household transfer flows exist between subgroups. We then outline the data sources and methods for analysis. The main results then consider international profiles based on a limited set of countries to show much household income compositions differ across the nations examined and of differences in national distributions when informal transfers are considered. We then discuss the comparison results of population sub-groups where comparison could potentially be most influenced by informal transfers, by age for old age and children, by location for urban and rural and by migrant status. We close the paper with further discussion.

2. Background

Disposable household income (DHI) is the core measurement concept that allows a level of 'net monetary welfare' to be calculated for households and to analyse the impact of transfers and taxation. In the main reference texts on monetary welfare measurement, the issue of deducting "payments" of informal transfers made by donor households to obtain a net measure of household monetary welfare is also well-established (see 'The Canberra Group' UNECE, 2011). The OECD (2015) redefined their computation of disposable income to match the Canberra Group's definition:

total income ***less current transfers paid***. Transfers are treated as quasi-compulsory if the

donor households consider that it reduces their ability to consume/save and that the

household is under some non-formal obligation or moral commitment to make it, e.g.

family support payments. (ibid, p.14, our emphasis).

This approach is consistent with definitions of household sector income and consumption in

National Accounts (UNDESA, 2008) and in the construction of household 'consumption

aggregates' (Deaton and Zaidi 2002), when consumption rather than income is used as the

welfare measure in many countries in the developing world.

At the national level, however, definitions of income do not reflect these standards. For

instance, in the United States, personal transfer payments are identified as personal outlays

(Bureau of Economic Analysis, 2016) and defined as one component of cash contributions paid

to persons outside the household or organization (Chao & Hall, 2008). Most studies use

disposable income measures that do not subtract inter-household transfers out; as do the

Census's money income measure and the Bureau of Economic Analysis's personal income

measure, as well as a series of alternative measures proposed (Current Population Report, 2005;

Ruser, Pilot, & Nelson, 2004).

3. Data and Measures

We use data from the Luxembourg Income Study (LIS) Database, which has been a

major contributor to the literature on international comparison of poverty and inequality since the

mid-1980s. LIS has pioneered producing harmonized and consistent internationally comparable

data to focus on differences in household monetary income levels and distributions and on the

impact of taxes and transfers on redistribution and resulting poverty and inequality. In recent

years, LIS has broadened its set of contributing countries from the mostly high income

'industrialized' economies of the EU and OECD to additionally consider 'middle income

countries'. This expansion brought in 18 such countries including China, India, Tunisia, Mexico

and others who were had representative survey data on household income. The addition of these

countries means that LIS can now be used to measure income inequality and poverty across a

wider range of economic development, and to assess the impact of taxes and transfers

accordingly. Recent research using LIS has expanded the analysis of fiscal taxes and transfers

across this wider set of countries, but has remained focused on formal 'state' rather than informal mechanisms of transfers (Caminada, Wang, Goudswaard, & Wang, 2017).

Using the LIS Database, we concentrate on a smaller sub-set of countries where we can see the presence of variables described as 'non-consumption expenditure' and verify that 'inter-household transfers paid' are present in the national data set. This variable is not present in all datasets and limits our ability to analyse a representative sample of countries. We therefore proceed on an exemplary basis, and choose countries where we can clearly identify and quantify the effect of informal transfers. We choose the most recent data from three 'middle income countries': China 2002, Dominican Republic 2007, and Peru 2013 where we also observe non-trivial levels of transfers. We apply the same criteria to high income countries and chose three: United Kingdom 2010, United States 2010, and Germany 2010 as they all have large 'foreign born' populations who are more likely to pay transfers as 'remittances' back to their countries of origin.

The harmonized variables created for LIS data record gross current income and its components as well as a set of variables listing 'non-consumption expenditures' that include 'income taxes and social security contributions' and 'inter-household transfers paid'. We can compare the results using two versions of a net disposable household income welfare measure: (1) Disposable household income (DHI) and (2) Alternative measure of disposable household income (ADHI). The disposable income measure is defined in the following two ways:

- DHI = Market income + Public transfers + Private transfers received – Income tax – Social security contributions (1)
- ADHI = DHI – Private transfer payment (2)

Put simply, when measuring welfare, if transfers paid out are not discounted from donor households but are included in the income of the recipient household, those sums are "double counted" in the whole income distribution and affect the empirically robust ranking of donor and recipient households in the overall distribution. A hypothetical scenario demonstrating the story of how double counting such private transfers would affect the ranking is displayed in Table 1.

Table 1. A hypothetical scenario demonstrating how double counting private transfers would affect the ranking

Under the definition of DHI*	
HH A ($100) HH B ($100)	Household disposable income (DHI) includes private transfers received. Within the $100 in household B, B received $20 of their DHI from A.
Under the definition of ADHI*	
HH A ($100 - $20 = $80) HH B ($100)	As household A transfers $20 to B, with the subtraction of private transfer payment, the ADHI of household A should be $80, but the ADHI of household B remains unchanged. The correct ranking in terms of the ADHI is that B is richer ($100) than A ($80).

Note: *DHI = Gross income minus tax and social security contribution;
ADHI = DHI minus private transfers paid; HH = household

The subtraction of inter-household transfer payments in addition to direct taxes and social security contributions allows us to clearly identify the differences of inclusion or exclusion of these sums in profiles and comparisons of income monetary welfare. While the use of this revised measure of household disposable income is not new, this paper is the first to explore the effect of using such a measure to consider some primary questions of comparability and consistency. Our approach is to use simple arithmetic decompositions of income sources to illustrate differences in welfare aggregates across and within countries and thus to point to differences from using unadjusted measures of disposable income that take no account of transfer payments.

4. Informal Transfers and Household Incomes

How important are informal transfers to overall household incomes in these six countries? Figure 1 shows average gross incomes across the six countries by source of gross income (income from all sources) and by the payments made for tax and social security deductions and payments out of informal transfers used to compute two versions of disposable income (DHI and ADHI). The data is expressed purely as percentages of gross average household income and makes no allowance of the huge differences in monetary living standards that occur across these countries. Figure 1 demonstrates much about the overall balance between

market incomes[3] and mechanisms of redistribution – both formal through direct taxation and state transfers, and informal through inter-household payments and receipts.

Figure 1. Income components and household gross income by country
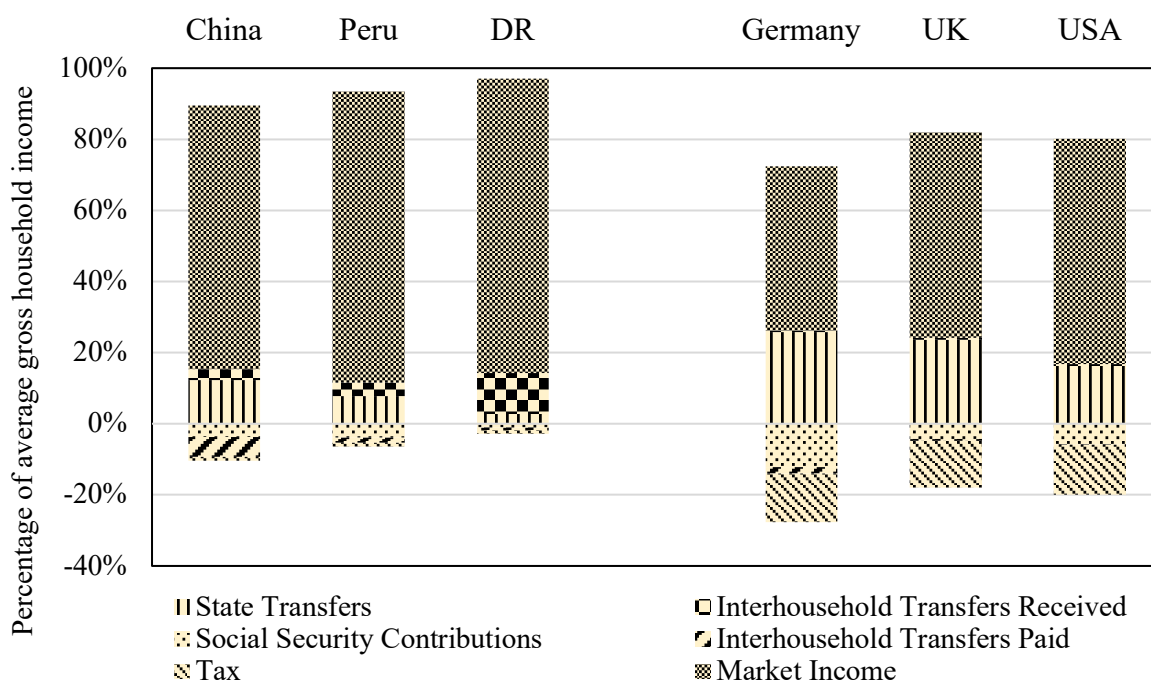
Source: Authors' Calculations from LIS

State transfers comprise larger shares of gross household income in the three industrialized countries: from 25.7 percent in Germany, 23.6 percent in the UK to 16.2 percent in the USA; compared to 12.3 percent in China, 7.8 percent in Peru and 2.7 percent in Dominican Republic (DR). Conversely private inter-household transfers are much higher in these developing countries from 11.5 percent in DR, 3.8 percent in Peru and 3 percent in China, compared to between 0.5 and 0.6 percent in the three high income countries. When we consider the deductions from gross income, the formal direct tax burden in the three developing countries lies between 1.1 and 1.2 percent compared to 13 to 14 percent in high income countries. Social security contributions are less polarized by development status – China, Peru, the UK and the

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[3] Market income includes labor income and capital income.

USA all have contributions at around 4 percent of gross income on average, while Germany has much higher levels 12 percent, and DR much lower at just 1 percent.

Finally, turning to private transfers payments: China's levels of deduction are 6 percent of average gross income, while Peru, DR, UK and Germany have between 1 and 2 percent and the USA reports lower levels still (a surprising finding given the levels of potential international remittances from a substantial immigrant population).

What difference does subtracting payments of informal transfers from net disposable income make to the reported welfare measure and when comparing countries? In Figure 2, we show the differences in disposable income resulting from the additional subtraction of payments of inter-household transfers (ADHI) in addition to those for direct tax and social security contributions (DHI) in. China is most affected, with average incomes falling by 5 percentage points from 95 to 90 percent of overall gross income, Germany falls by 2 percentage points and Peru, DR and UK all by a single percentage point, while no difference is shown in the USA.

Figure 2. Differences in average net disposable incomes by country
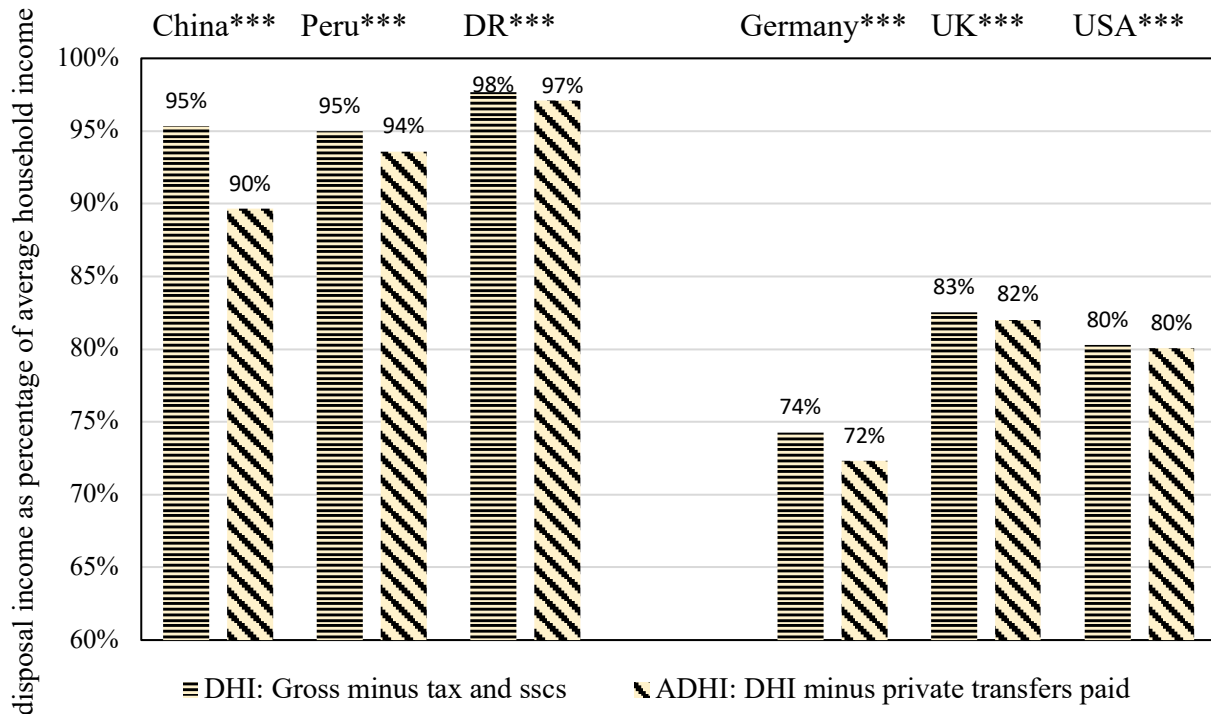
Source: Authors' Calculations from LIS; *** p<0.01

Figure 3. China's average household living standard compared in purchasing power parities (different years – 2005 ppps)
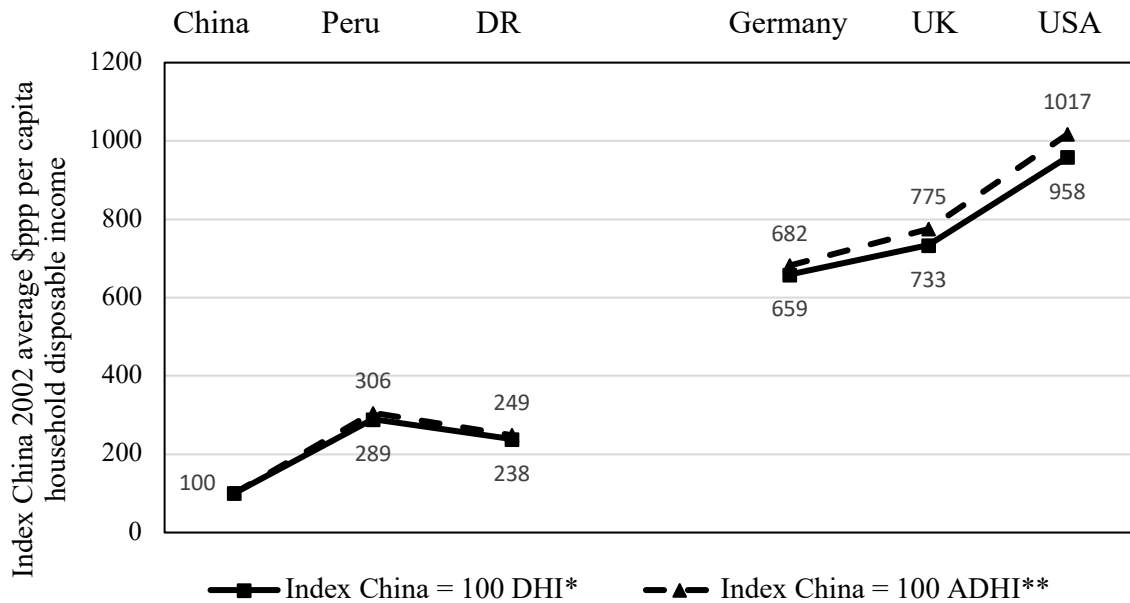

Note: *DHI = Gross income minus tax and social security contribution;
ADHI = DHI minus private transfers paid;
Source: Authors' Calculations from LIS

Results in Figure 3 use index scores to compare national average disposable household income using a consistent purchasing power parity with China as the base comparison set to 100. Using this approach, China (2002 data) is considerably poorer relative to other comparison countries in terms of net household living standards. Peru (in 2010) is 2.9 to 3.1 times Chinese levels, while comparison of USA to China rises from 9.6 to 10.2 times using the ADHI measure. Although the comparison is presented in constant and real p.p.p. values, the data were generated during an earlier period in China. Given China's rapid economic growth, contemporary comparisons would be more useful for a comparison of the present situation.

However, the underlying problem of measurement is clear, if household income is not discounted to subtract payments of inter-household transfers, comparisons are likely to overstate living standards in countries where such payments are common and represent a substantial proportion of gross household income. The large caveat surrounding these results is an empirical one – on the USA and an apparent under-representation of that difference.

We now turn to look at a comparison of the characteristics of the national distributions in these six countries. How does income inequality differ using the two approaches to disposable income? We compute Gini coefficients and percentile point shares in accordance with suggested summary approaches to inequality (Cowell, 2000)[4]. However, before discussing overall index scores, it is important to consider where the remitting and receiving households are placed in the overall income distributions and Figures 4 and 5 show the decile composition of gross income by income components and resulting DHI and ADHI measures. We use a simple per-capita equivalization approach to control for household size.

Figure 4. Per capita income across decile groups in three middle income countries
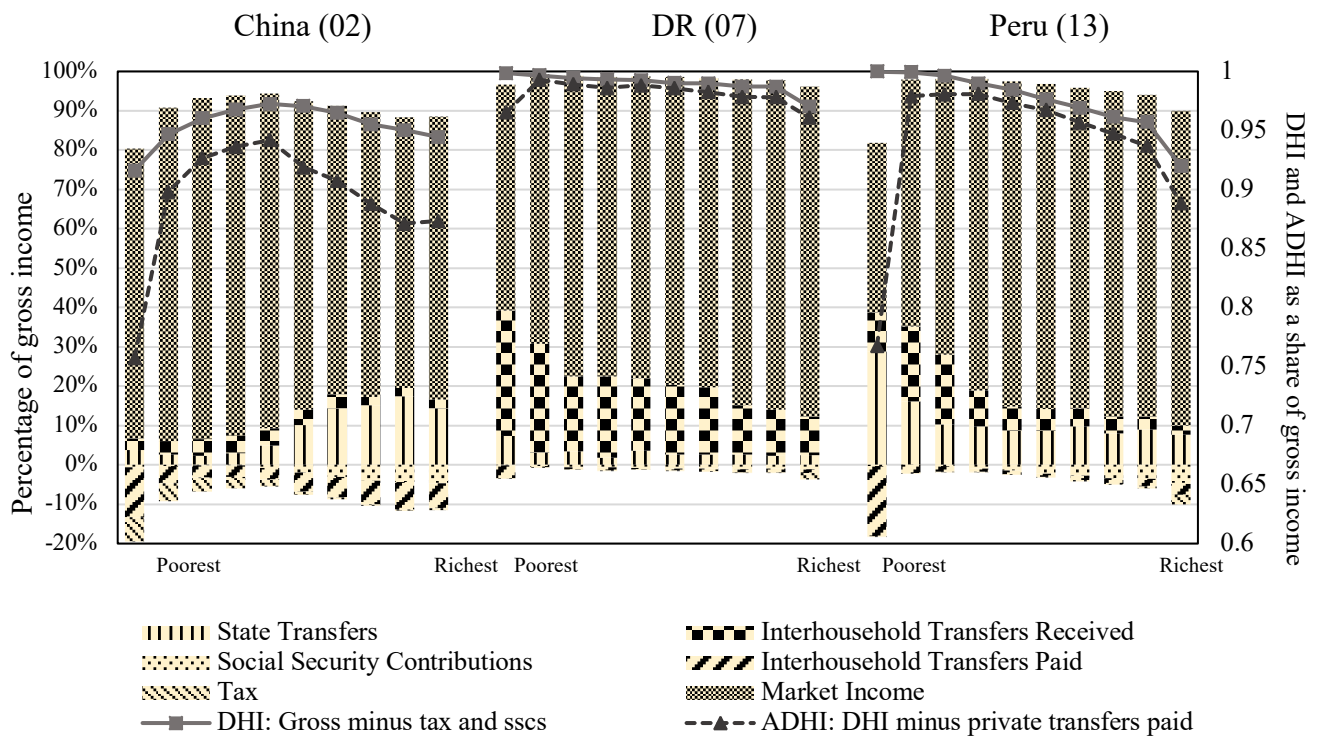
Source: Authors' Calculations from LIS

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[4] See Cowell, F. A. (2000). Measurement of inequality. *Handbook of income distribution*, 1, 87-166. for discussion.

Figure 5. Per capita income across decile groups in three developed countries

Germany (10)   UK (10)   US (10)

Legend:
- State Transfers
- Social Security Contributions
- Tax
- DHI: Gross minus tax and sscs
- Interhousehold Transfers Received
- Interhousehold Transfers Paid
- Market Income
- ADHI: DHI minus private transfers paid

Source: Authors' Calculations from LIS

Figure 4 shows the results of three 'middle income' countries. In China, we observe an overall inverted U-shaped incidence of informal transfer payments across the distribution with the lowest decile having the highest proportional payment to assist people in higher deciles, but with higher deciles having increasingly large payments of informal transfers. In the poorest decile we see a combination of high payments of informal transfers and disproportionately regressive hit of direct taxes. For the 2nd and higher deciles we see gradual increases in informal payments and reduction in direct transfers, alongside much higher receipt of state transfers. The overall effect on dispersion of incomes and inequality are likely to be considerable. The Dominican Republic also has the highest proportion of payments of informal transfers located in the bottom decile and very small deductions for tax and social security across the whole distribution. A similar regressive story of incidence of informal transfer payment is observed in Peru[5] alongside small but progressive incidence of taxation and social security contributions.

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[5] There is large number of negative values in the reporting of market income in the Peru survey data. We have adjusted market income to zero in these cases and re-computed decile values. Interpretation of results must bear in mind this particular attribute of Peruvian data for the bottom decile.

The common finding across our three middle income countries is the regressive incidence of informal transfer payments, and this is an important finding for inequality and for the computation of the effect of taxes and transfers across informal and formal forms.

Results in Figure 5 show the similar patterns for our three high income countries. Across all three developed nations, the level and decile differences in inter-household transfers received and paid are small. In contrast to the middle-income countries, we see that formal taxes and transfers are more progressive overall. Only in Germany does the difference between the decile levels of DHI and ADHI widen as income rises, suggesting an overall small redistributive effect.

In summary, when we consider DHI and ADHI across the distributions in Figures 4 and 5, they show the difference created more of an inverted-u-shaped profile for middle income countries but makes little difference in three high income countries examined. This suggests that comparing inequality between our middle income and high-income countries will be affected by moving from DHI to ADHI. Table 2 confirms this, with the Gini coefficients for DHI and ADHI for each of our six countries.

Table 2. Gini coefficients by country

	DHI*	ADHI*	Change in Inequality	Score difference (ADHI-DHI)	Percent difference (ADHI-DHI)/DHI
China	0.482	0.487	+	<0.005	1.04%
Peru	0.514	0.517	+	<0.003	0.58%
DR	0.534	0.535	+	<0.001	0.19%
Germany	0.356	0.360	+	<0.004	1.12%
UK	0.388	0.388	+	<0.0001	--
USA	0.415	0.416	+	<0.001	0.24%

Note: Note: *DHI = Gross income minus tax and social security contribution;
*ADHI = DHI minus private transfers paid;
Source: Authors' Calculations from LIS

Table 3. Percentile ratios of national distribution by country

	10th/50th percentile ratio (%)			90th/50th percentile ratio (%)		
	DHI*	ADHI*	Difference	DHI	ADHI	Difference
China	0.253	0.247	- 0.006	3.146	3.171	+0.025
Peru	0.132	0.130	- 0.002	3.068	3.075	+0.007
DR	0.266	0.268	+0.002	3.381	3.407	+0.026
Germany	0.408	0.408	0.000	2.198	2.208	+0.010
UK	0.413	0.413	0.000	2.360	2.352	- 0.008
USA	0.298	0.298	0.000	2.460	2.464	+0.004

Note: Note: *DHI = Gross income minus tax and social security contribution;
*ADHI = DHI minus private transfers paid;   Source: Authors' Calculations from LIS

Results in Table 2 suggest an overall increase in inequality across countries, except UK and that the comparative levels of inequality in the three middle-income countries rise against their higher income counterparts using ADHI. China experiences the largest change in Gini point difference and growing inequality when taking inter-household transfers into account. In the higher income countries, Germany's inequality score grows by 1.1 percent when ADHI is used instead of DHI.

Our results from Figures 4 and 5 suggest that by applying ADHI, the 'bottom' of the distribution is falling against the higher deciles in middle income countries, when compared to the effect in higher income countries. To test this, we calculate the percentile share ratios for the 10th to 50th and the 90th to 50th percentile points and these results are reported in Table 3.

When looking at the economic gap between the bottom and the median income households for the first measure of disposable income (DHI), income of the poorest Chinese households account for 25.3 percent of that of the median income households, slightly lower than that in DR (26.6 percent). In contrast, income of Peruvian households in the bottom tier of income distribution only equals 13.2 percent of that of the median income households; across the six countries, Peru is the most unequal in terms of the bottom half of income distribution. In the high-income countries, the bottom groups' income accounts for 40.8 percent of that in median income households in Germany, 41.3 percent in UK, and 29.8 percent in the United States. Turning to the newly proposed definition of disposable income (ADHI), the ratios in the three developed nations remain unchanged, while the alternative net disposable income measure

lowers inequality for the bottom half of distribution in the DR. This might be because the large portion of remittances that the poorest receive compensates their payments out. Not surprisingly, the poorest households in both China and Peru are negatively affected by introducing the new net disposable income. Income in the bottom group of Chinese households is equal to only 24.7 percent of that in median income households, decreasing by 0.6 percentage points, and the ratio of poorest to median households in Peru decreases to 13 percent.

In terms of the top tier of income distribution, introducing the alternative measure further strengthens the ability to secure income for the richest in these countries, except the UK where equality is achieved, causing the ratio of rich to median-income households to decrease 235%. The top halves of income distributions in China and Peru also witness increases in their ratios, with 317 percent and 308 percent, respectively, compared to 221 percent in Germany and 246 percent in the US. Of all the countries, the most unequal distribution exists in DR's top half group. Income of the affluent households in DR is over 340 percent of that in median-income households. Given the decreasing inequality in the bottom half group in DR, the income inequality in DR is more likely being driven by the higher end of distribution. Within all these countries, inter-household transfer flows affect middle-income countries the most, especially the lowest income group in China and Peru. The overall inequalities between the poor and the rich are widening in all these countries, with the UK having the mildest effect.

## 5. Differences in Comparison of Subgroups

We now turn to consider more applied consequences of our revised income measure on sub-groups of the population for whom we would anticipate a larger effect than for the average population. Private transfers are likely to be directed to children[6] and Figures 6 and 7 show how gross household income changes in composition for households with children (1), compared to three other types of household: all households without children (2); households without children that also have an elderly person present [7] (3); and for households with no children and adults aged 60 and over (4). Taking the comparison of households with and without children (1) to (2) in the first instance, we see that there is a net effect of ADHI lowering disposable income as a share of gross income considerably for households without children in China, the Dominican

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[6] Households with children are defined as the presence of at least one child aged 17 or younger within the household.
[7] An elderly person is defined as aged 60 or older.

Republic and in Germany, with smaller differences in Peru and the UK and no difference in USA. However, when we control for the presence of older people, by considering both bars (3) and (4), we see that the differences in households without children widen very considerably when elderly members are present. Informal transfers to these groups are highest in China, Dominican Republic and Peru alongside higher proportions of state transfers (presumably pensions). In Germany, we see similar rises in the proportion of gross incomes from both state transfers and informal transfers for these childless household with elderly members, but no informal transfers of any consequence in UK and USA. But this group of households are also paying out significant proportions of income as informal transfers in China and Dominican Republic. For the households with no children or elderly present, they tend to have the lowest DHI as a proportion of gross income compared to the other households, and additionally in China, Dominican Republic, we see the gap between DHI and ADHI at its largest, suggesting large informal intergenerational transfers paid out from this group.

Figure 6. Income components and gross incomes between household with/without children and childless household with/without older adults in middle-income countries
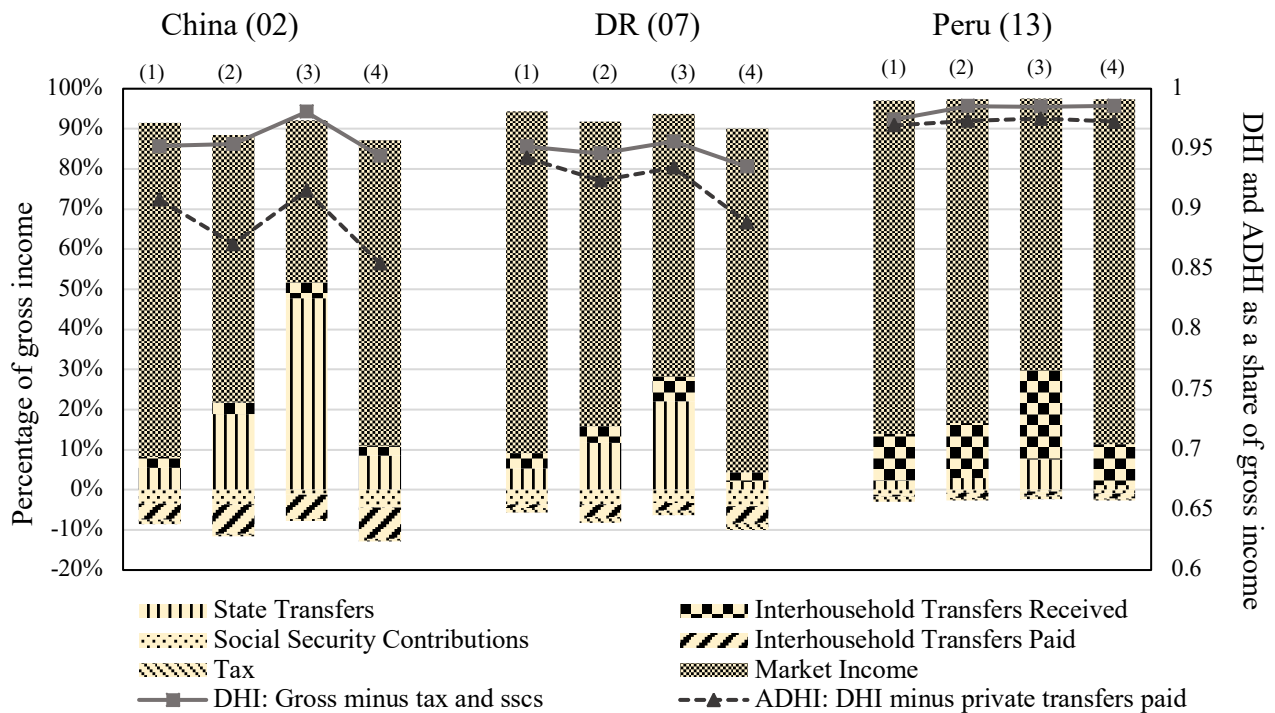
Note: (1) HH with children; (2) HH without children; (3) Childless HH with older adult
(4) Childless HH without older adult; HH=household
Source: Authors' Calculations from LIS

Figure 7. Income components and gross incomes between household with/without children and childless household with/without older adults in high-income countries
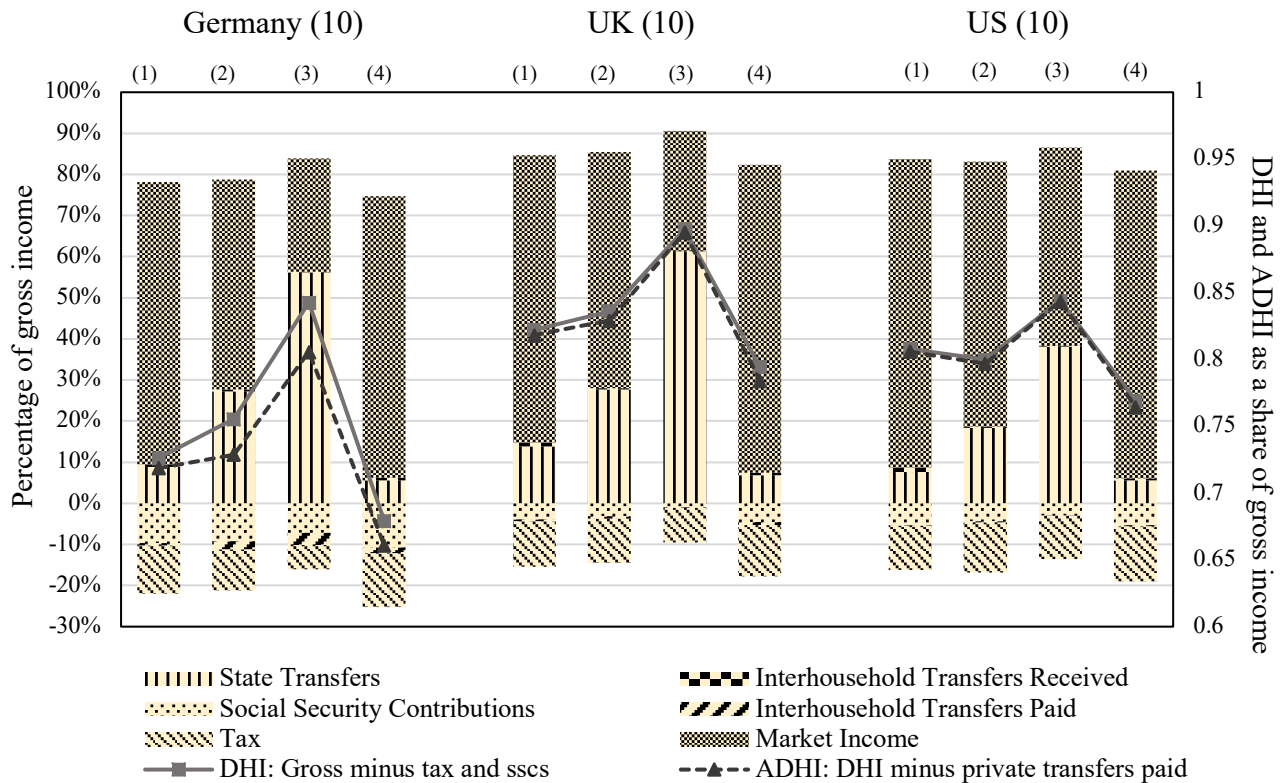

Note: (1) HH with children; (2) HH without children; (3) Childless HH with older adult
(4) Childless HH without older adult; HH=household
Source: Authors' Calculations from LIS

Figure 8 confirms that households with elderly people (1) when compared to households without elderly (2) have higher proportions of DHI to gross income across all six countries, but results demonstrate that payments of informal transfers lowers the proportion consistently in all countries except UK and USA. China shows the biggest proportional difference if ADHI is considered alongside DHI. But once again, we see that payments out of informal transfers happen from elderly households at levels that are not lower than households with no elderly people. The direction of private transfers across the generations appears to be multi-directional.

Figure 8. Income components and gross incomes between household with and without elders across countries
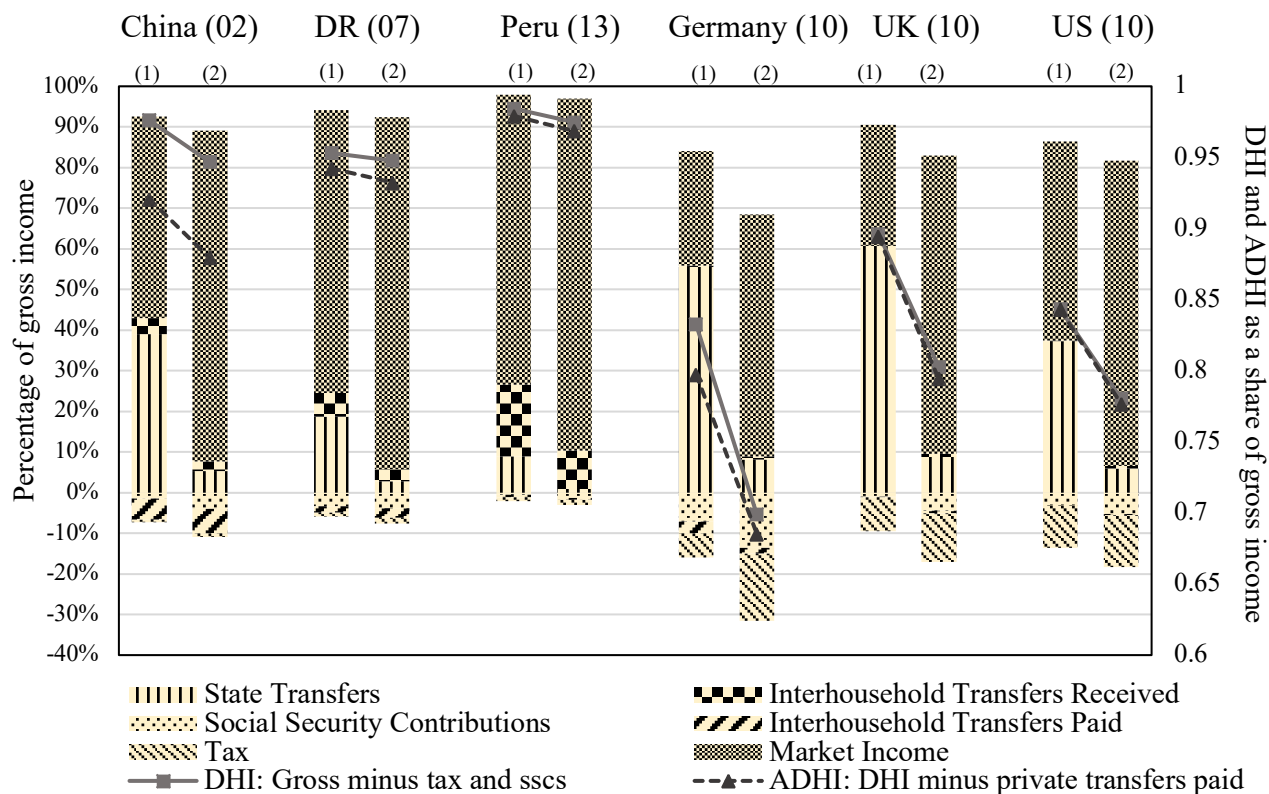
Note: (1) Elderly Household; (2) Non-Elderly Household; HH=household
Source: Authors' Calculations from LIS

These results strongly suggest that informal transfers can have large proportional effects on incomes across the generations, particularly in China, but that payments out of informal transfers occur alongside receipt on average across these demographic groups. This may be an 'averaging' effect and the households who receive many not be those that pay out, but this is unlikely and there will be considerable 'churn' of informal transfer payments and liabilities that need considering in any future research alongside the issues of co-residence and the presence of multi-generational households.

Figure 9. Income components and gross incomes between rural and urban households
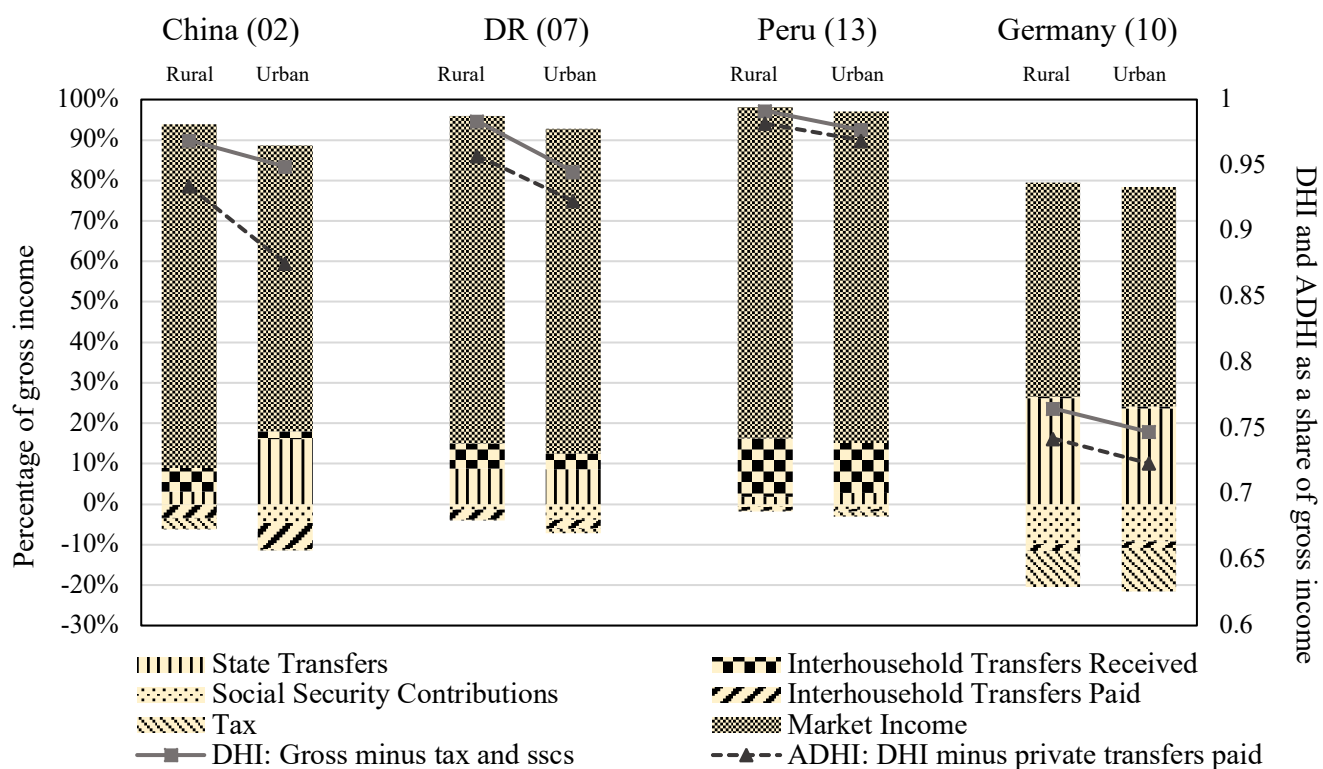

Note: Data from the UK and the USA not shown as urban–rural classifications are unavailable
Source: Authors' Calculations from LIS

We now turn to consider informal transfers that are expected to be observed alongside migration. We are not able to observe 'migrant status when it occurs within countries in LIS data. However, we can compare households by the main locational economic driver of migration within countries in the developing world – residence in rural or urban locations. But within our six example countries we are only able to see urban locational variables in four countries shown in Figure 9. As expected, and reflecting the huge urban migration underpinning the manufacturing boom in Chinese development, the difference between DHI and ADHI between rural and urban households in China is very large and private transfer flows are from urban to rural areas, making large differences in ADHI that are far greater than observed from DHI. In the other four countries, the direction of difference from urban to rural is the same but differences between DHI and ADHI are largely equal across urban and rural locations.

Figure 10. Income components and gross incomes between immigrant and native household
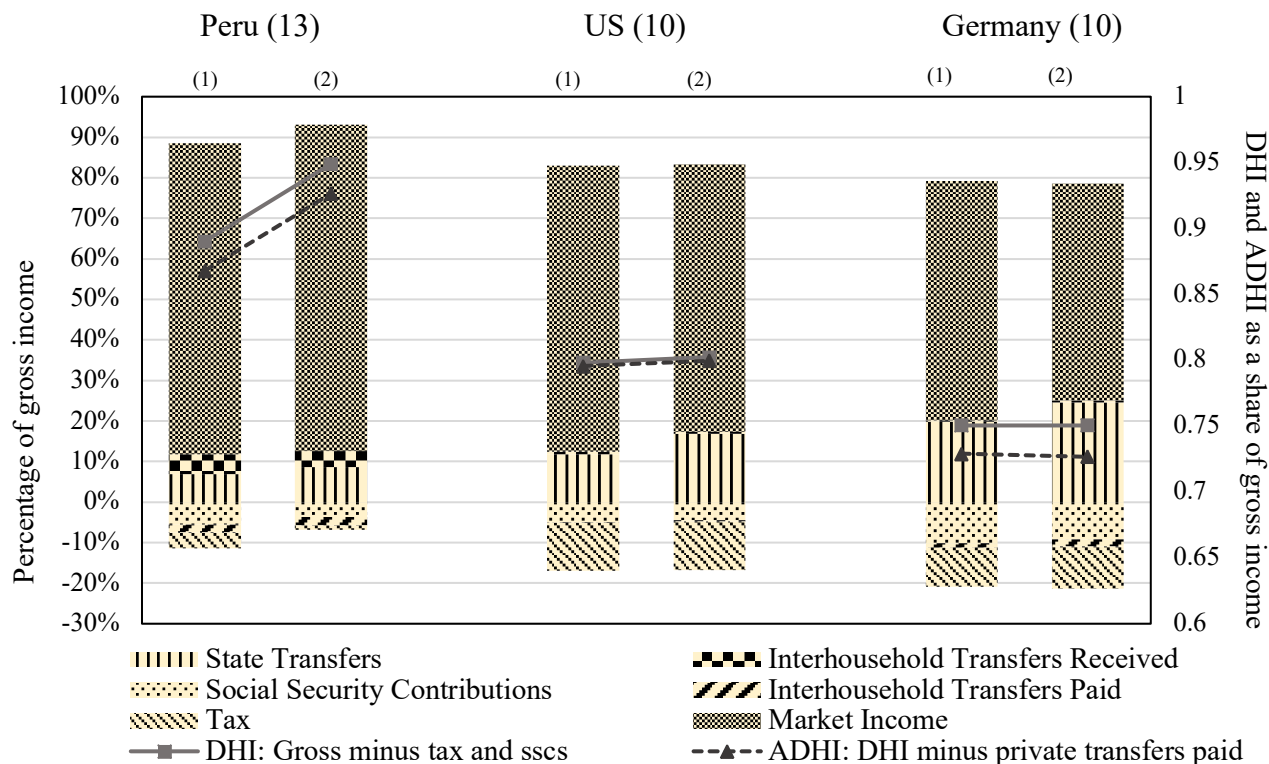
Note: (1) Immigrant Household; (2) Native Household; HH=household
Source: Authors' Calculations from LIS

Our final comparison is between the incomes of international migrants and the rest of the population in 'destination' countries from our example countries, we are only able to see variables that capture nationality and nativity in three countries[8]: Peru, USA and Germany. Figure 10 displays household income components and DHI and ADHI for those 'immigrant' households verses others. Clearly there are significant differences in the proportion of incomes reported in DHI and ADHI terms, and any assessment of income of migrants in Peru and Germany would clearly overestimate income if transfer payments were not deducted. However, it is noticeable that in Peru, the tax and social security liabilities seem relatively higher for migrants alongside the informal transfers and payments that differ less between migrants and others.

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[8] We use three variables (which are immigration status, citizenship, and country of birth) to define an immigrant household, which is a dichotomous variable where the sum of any of these variables is greater than zero across all members of the same household and are coded as a value of 1, otherwise are coded as 0.

6. Discussion and Conclusion

Comparing household living standards across countries and considering the impact of transfers and taxes on redistribution, poverty and inequality has been a major theme of economic research on cross-national inequalities, poverty and the role of welfare states and fiscal redistribution. However, once research includes countries with different economic and political institutions and welfare systems that have large informal rather than state components, there should be some reflection on how to measure household economic well-being consistently across such different policy contexts.

This paper takes a simple concept and a basic arithmetic approach to explore one element of this growing and important agenda: the consideration of the effect of informal transfers alongside formal taxes and transfers. We employ simple arithmetic to compare a new version of 'disposable household income' that deducted payments of inter-household transfers and consider the differences in welfare assessments that resulted. We see that comparing high-income to middle-income countries would give different results if household incomes were adjusted to deduct payments to other households – particularly important for comparing China, a fast-rising economy, to the established high-income countries. We observe that inequality rose when such adjustments were made, and that they were regressive in impact as the poorer part of the distribution appeared to lose out. We then consider how such adjustments would affect our interpretation of subgroup differences within and across countries, and results suggest that in our example, middle-income countries appeared to have informal transfers with intergenerational effects, to transfer from urban to rural areas – particularly so in China – and that comparing immigrants' welfare levels would overestimate if remittances were not deducted. All these findings are confirmatory rather than revolutionary and merely open the door more firmly for recognition of a measurement problem that can be taken up by others in future work.

All the technical advice from the seminal sources on household welfare measurement suggests that deducting payments made to other households is necessary to have consistent measures of household welfare and to avoid "double counting." The main problem is that survey data is often not designed to identify those payments, and long-standing practice is mostly based on research focused on advanced industrial economies, where the problem is probably marginal in impact. Our results suggest that the effects in China and other countries are far from marginal

and will require consideration for future work on household welfare and redistribution for new emerging economies. That future work should involve more advanced methods than our simple arithmetic – especially to decompose more based on characteristics rather than solely on arithmetic. The work on decomposition of earning differences from Oaxaca (1973) and others, and understanding how informal and formal transfers "substitute" for each other or not, are clear priorities for future research. In short, more advanced methods of decomposition and econometric analysis of the relationship between formal and informal transfers could help design social protection and fiscal policy for developing economies. More advanced methods used on a larger selection of countries would then cement that work into a future analysis of national economic household redistribution and inequality globally. An expansion of core economic considerations on the redistributive effects of different forms of social pooling and sharing of risks – be they formal taxation, transfers and services, or informal arrangements – could make a considerable contribution. Our aim was to show that the issue of informal transfers was relevant and pertinent, and we believe that is demonstrated but needs to be developed further.

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