Detailed income calculations for Dollar Street

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How did we assign a dollar per month value to each home? Before we answer that, we need to be clear on what we actually try to measure with the "dollar per month" measure. To define that, we first have to choose between a number of possible interpretations. What those choices are and how we decided them is discussed in the first section below.

What to measure

The first thing to consider is if we should display the situation as it is right now, (during the last week), or as the average situation during a longer period, (during several years). Incomes, especially the incomes of the poor, tend to vary over time. For example, a casual laborer can go unemployed for extended periods of time, and the short term income can actually drop to zero. A farmer can get most of their "income" only at harvest time, so that their income is virtually zero during most of the year.

With this in mind we have to choose whether we represent the living standard "right now", e.g. during the day the home was photographed, during the preceding week, or perhaps try to represent a more average living standard over the longer term, such as during the last couple of months or years. We chose to go for the latter; we should in principle try to display the living standard during the last year.

The second thing to consider is whether we should try to measure the gross income, net income or consumption (the latter is not income as such, but is a common indicator of living standard). We also have to decide if we should include public consumption, e.g. should we take free healthcare, if any, into account? We decided to try to measure consumption. Consumption is a better representation of long term living standards, since consumption can be smoothed with savings or dissaving. We chose to disregard public consumption, such as free healthcare and the like, since we had no practical means to take that into account.

The third thing to consider is whether we should display the total household income, income per capita or income per "adult equivalent". Total household income is the most straightforward to explain but as a measure of the living standard it has obvious shortcomings since a large but poor home might very well get a higher total income than a richer single household.

Per capita income, i.e. the total income divided by the number of household members, is better, and it is also pretty straightforward to explain. However, it does not take into account the fact that children require less spending than adults, and that there are economies of scales with bigger households. To take this into account, many surveys use a so-called "equivalence scales". With these we divide the total household incomes with the number of "adult equivalents" rather than the actual number of persons of the household. Various authors have suggested different ways to calculate the number of adult equivalents in a household (the most common methods are described here: http://www.oecd.org/eco/growth/OECD-Note-EquivalenceScales.pdf), but we chose to use the so

called "OECD-modified scale". With this scale we calculated the number of "adult equivalents" by assigning a value of 1 to the household head, of 0.5 to each additional adult member and of 0.3 to each child (under the age of 14 years). Hence, a home with 2 adults and 3 children have 1+0.5+3*0.3=2.4 adult equivalents. Accordingly, if the home has a total income of 4,800 dollars, they have 2,000 dollars per "adult".

To sum up: our ambition is to display the consumption, over an extended period (a year), and express it as per adult equivalent (using the "OECD modified scale"). But that is only an ambition, the information we have does not often fit this ambition well. Our main source of information, besides the photos themselves, is a questionnaire that photographers asked each home. In the next section we discuss what information we have to work with.

Available information

The most important of the questions in our questionnaire is "what is your average income per week?", which we asked each household member. In addition, we ask for the age of each household member, so that we can calculate the number of adult equivalents in the home. We also ask about the ownership of a number of assets, which we can, as will be described below, use to get an indirect estimation of the living standard.

In addition to that we also ask a number of other questions that we can use as complementary information. Two of those questions can, in combination, be used to roughly estimate the size of own food production. They also report the profession and working time of each household member. When income information is missing we could use that question to assume that they earned the average income in the specific profession in the area they were living (we were often able to find the average income by profession and country in various online resources). Finally, there were a number of questions that could at least indirectly hint at a certain level of prosperity, e.g. if they had been on vacation far away, if they were saving a lot and a few other similar things.

Then we have the photos themselves. These shed light on some additional assets not included in the questionnaire (although in an unsystematic way). More importantly, they can also give us a rough idea about the quality of the assets, something that is not taken into account in the questionnaire (that only asked about whether an asset existed or not). To use the information in the photos in a more systematic way we let three external consultants make a subjective evaluation of the homes and of a selected asset (the sofas). Their subjective evaluations correlated relatively well.

In addition to information coming from the dollar street project we also used data from other sources that could give us some kind of reference points. This information included:

- Lindgren (2015) have tried to calculate a "physical minimum" line, i.e. the consumption level under which hunger becomes unavoidable. He finds that at a consumption below about 0.5$ per day per capita implies an insufficient nutritional intake, even for a person that manage to focus the available resources optimally. Hence, we should expect a total consumption larger than $0.5 per day per person that are not clearly undernourished, and that have at least some other consumption.

- We sometimes looked up the average salary for specific professions, in specific countries. We occasionally used this information to guesstimate the income of individuals who had stated a

profession, but not any income, by assuming that they earned the average salary. We used a variety of sources for this information, noted in the home-specific footnotes. A common source was http://www.wageindicator.org that in many cases provided wage surveys for specific countries.

- We also looked at various surveys to find information of "typical" income or consumption levels for specific groups (e.g. small scale farmers in China). This was used as a point of reference to check the plausibility of our figures.

- Furthermore, we used data on minimum wages for each country and, when applicable, for a specific type of profession. We also tried to find information on how common it was that salaries were below the minimum wages. We obviously did not know how a particular wage related to the minimum wage, but we could use this information as a point of reference to cross-check how realistic a particular figure was. To find this information we used the following Wikipedia page as a starting point: https://en.wikipedia.org/wiki/List_of_minimum_wages_by_country as well as http://www.wageindicator.org/main/salary/minimum-wage. From the wikipedia page we could often find more specific sources (noted in the home specific footnotes), or we simply trusted the Wikipedia page.

- We looked up information on the amounts paid to beneficiaries in social welfare. We used this information to guesstimate the incomes of persons who we assumed received such payments.

- In some cases, we examined the data on the income levels by income groups, e.g. the average income in dollars for the poorest quintile in a specific country. This was used as a reliability check for some specific figures.

So, in summary, the main information we have to work with is reported income, household size, reported assets, information about own food production, professions, working time, vacation trips and savings, and, finally, the photos themselves. This information has some obvious shortcomings if we want to calculate the long-term consumption level per adult-equivalent. We did not ask about consumption, but about income, and it is not always clear if the household has reported pre- or post-tax income, or if it is the recent income or the average income over a year, or whether all income sources have been consistently reported, e.g. including remittances from other, public welfare, capital income etc. However, that is what we have, so we needed to come up with a method to use this information. So what did we do? We start by discussing the most straightforward source of income data: the reported income.

The reported income

For richer homes that do not report any own food production we simply use the reported income, divided with the number of adult equivalents. To transfer them to dollars we use the consumption PPP rate from world bank (based on the 2011 round of the international comparison project). Unfortunately, with the data at hand we simply have to disregard the effects of savings and dissaving, even though our ambition was to get consumption rather than incomes.

Household members occasionally report that they do extra casual labor, without reporting any income for that labor (perhaps since the income question were understood as referring only to their main employment). In such cases we tried to guesstimate the additional income by looking at the average hours worked and the average hourly wage for similar jobs in the country (or some similar method).

One non-monetary source of consumption that we do try to take into account is the consumption of food that are either grown by the household themselves, or gifted to the household. How we did that is discussed in the next section.

Food that is not purchased

Several of the households report that they consume food either grown themselves or given to them. These homes are most common at lower incomes, but occasionally at higher incomes as well. Just using the reported incomes would underestimate the incomes at those homes. Luckily, the form included two questions that in theory could be used to assess the consumption of home produced (and gifted) food:

1. "Of the food consumed last week, how much came from: % own production; % purchased; % gifts and other sources"
2. "How much of your money is spent on food?" (followed by a multiple choice of percentage brackets)

The questions, especially question (1), has obvious shortcomings for our purposes. The "food consumed last week" focuses on a very recent period and it might mainly reflect short term fluctuations. In addition, it is not clear whether the question will be understood as the percentage of the (implicit) cost of the food that was purchased or the percentage of the "amount" of food (whatever that might be). But if we assume that the two questions were understood in a consistent manner (all expressed in terms of percentage in money terms) and that we can accept their answers at face value, then we could in principle calculate the value of the non-purchased food.

To do that, let Y be the total reported income, b be the share of the money going to buy food, and n be the share of food consumption that is not purchased (i.e. either gifted or produced by the household). Let F be the total food consumption, that equal the food bought, B, plus the food that is not bought (produced or gifted), N. Total consumption, T, equals non-food consumption, C, plus total food consumption F. What we have then is:

$$B = b * Y$$

$$B = (1 - n) * F$$

$$C = (1 - b) * Y$$

$$T = C + F$$

The three variables, Y, b, and n, we know and T is what we want to know. With a few twist and turns we get:

$$T = (1 - b + \frac{b}{1-n}) * Y$$

So the total consumption should be the reported income times a markup factor. We calculated this markup factor for all households, but we can obviously not use this at face value, at least not automatically. First, as already pointed out, the questions are open to interpretation and the reference

periods might be too short. Secondly, several homes report values that are internally inconsistent if we interpret them in the way we did above. For example, some homes report that all their food is from own production, but still they claim they spend a lot of money on food. Many other homes report values that implies an implausible large markup factor.

With this in mind we only used the markup factor as a rough indicator of food consumption, one of many factors we used when we essentially guesstimated the income of the home. Sometimes we made a guesstimate that used the mark-up factor at face value, other times we decided to make a larger or smaller adjustment. In the end, all the homes with significant share of non-purchased food should be considered guesstimates.

Other adjustments: free housing

Another potential non-monetary source of consumption is owner-occupied housing. Imputing this consumption is a common concern in both national accounting and in consumption services. We try to follow similar principles as in, for example, the US national accounts. This is how the US Bureau of Economic Analysis (BEA) describe their estimation:

"(T)he imputed rental value of owner-occupied housing are both part of (personal consumption expenditure) housing services, reflecting (…) the amount of money owner occupants would have spent had they been renting. Owner-occupied housing is (treated as if) a landlord renting to him or herself. That is, BEA imputes a value for the services of owner-occupied housing (space rent) based on the rents charged for similar tenant-occupied housing, and this value is included in GDP as part of personal consumption expenditures." http://www.bea.gov/papers/pdf/RIPfactsheet.pdf

The families in Dollar Street that rent their homes have an expenditure that the own-occupiers do not. Some of the owner-occupiers quite possibly still have outlays for housing loans and similar, but in the cases where we thought it clear that the home did not imply any such outlays (e.g. if they were gifted) we tried to guesstimate the implicit renting cost, and include this in the total consumption of the family.

The ownership of assets

So far we have discussed the reported incomes and our adjustments. However, for many low and middle income homes the situation is even more complicated than we have assumed so far: many people have no stable income, payment is often in kind, there is a large informal economy, and few people have a labor contract. Hence, we have to complement the reported monetary income with additional information. What we chose to use is information on assets, something that will be discussed in the next section.

The main alternative indicator we used is the so-called International Wealth Index (IWI) (see Smits & Steendijk, 2015, for in-depth background). This index does not look at the income received by the household members, but at the assets which they have. Those assets include the possession of durable goods (like a TV, refrigerator or car), whether the household has access to basic services like electricity and piped water, and characteristics of the house in which the household lives (number of rooms, quality of floor material and of toilet facility). Given that these assets are easily observable, the information needed for computing IWI can be reliably measured by an interviewer.

Households with more durables, better quality housing and access to basic services are supposed to be wealthier than households with less durables, lower quality housing and no access to services. A household's score on the IWI can be computed by entering the information on the availability of assets, access to basic services and housing characteristics into a simple additive formula, which is the same for households from all regions of the developing world.

The next step is to translate the IWI score into Dollars. Hence for each IWI value we have to determine the corresponding value in Dollars. This is not an easy task, as the prices of durables, building material, labor costs and services vary considerably across countries and regions. A simple one-to-one translation of IWI values into Dollars is not possible.

We therefore have chosen for an 'average' IWI-Dollar conversion based on household surveys for several low/middle income countries. For this purpose, we needed surveys that included both income/expenditure data as well as the asset data needed to compute IWI. We were able to get access to such data for four countries: India, Malawi, Nigeria and Brazil.

First the household's IWI score was computed for all households in the datasets on the basis of the available asset information. Next a cross-nationally comparable indicator was constructed for yearly household income. We then translated all incomes into 2015 Dollars. Because the durables included in IWI are tradable goods (TVs, cars, phones etc.), we used exchange rates instead of PPP-based rates (which are adjusted for prices of non-tradable goods).

We estimated the association between IWI and income (in 2015 dollars per day), and what we got was:

$$Income = 1.489056 * Exp(0.02918 * IWI)$$

We will henceforth call this income the "IWI income", to contrast it with the "reported income". The IWI income can only range between \$1.5, for an IWI of zero, to \$27.5 for an IWI of 100. This is a problem since there are many households both below and above this range. This means that increases in income above a certain level do not lead to a higher IWI value. Between IWI 90 and IWI 100, therefore, all households earning more than \$20 per day are concentrated. Because the variation in income is higher at the higher IWI levels, the translation of IWI into Dollars becomes less and less meaningful there. At the same time the reported income is likely to become more reliable at higher incomes.

The team behind the IWI suggest that it is better to rely solely on reported income above, say, an IWI value of 65, which corresponds to about \$10 per day. Hence, above an IWI income of \$10 we generally used the reported income alone, whereas when the IWI income was below \$10 we used the average of reported income and IWI-income (below we discuss the reasons for using the average of the two income indicators, rather than using the IWI-income alone).

Below an IWI-income of \$2 per day (an IWI value below 10) we generally use other information to make guesstimates, since the model is so uncertain anyways, and since the model never can yield an income below \$1.5 per day. The information we use for these guesstimates will be discussed in further details below.

So why did we choose to use the average of the IWI income and reported income? In some cases we only had the IWI to go by and we were then forced to guesstimate the consumption mainly based on the IWI model. However, in many other low income homes we had both IWI income and reported incomes, both of which are likely to have their own data problems. The reported incomes might not

fully reflect all the consumption, even if we try to guesstimate the food produced by the household. The IWI income only reflect a limited set of assets and it does not (with some exceptions) take the quality of those assets into account. The average of these two indicators might hence smooth out some outliers.[1]

With that we have discussed all the main sources of data, and we can move on to sum everything up, something we will do in the last section.

Summary

The two main sources of data we have was the reported income and the IWI scores based on assets.

As for the *reported incomes* we took the sum of all the reported incomes of the household and divided it with the number of adult-equivalents, calculated using the OECD modified equivalence scale. When needed we adjusted for food produced by the household and some other unreported sources of consumption, including owner-occupied housing.

We used information on *the ownership of assets* to calculate an IWI-score, that can take values between 0 and 100. This IWI-score was then transferred to a consumption level, using the formula estimated by the Global data lab:

$$Consumption\ per\ day = 1.489056 * Exp(0.02918 * IWI)$$

When all of this information was missing we were forced to make *guesstimates*, sometimes based only on what we saw in the pictures, and sometimes utilizing additional bits of information. We used different combinations of this information depending on the IWI score:

- For homes with IWI-scores of 66 and above: we used the reported income per adult equivalents, adjusted when needed.

- For homes with IWI-score between 10 to 66: we used the geometric average of the IWI-income and reported income per adult equivalent.

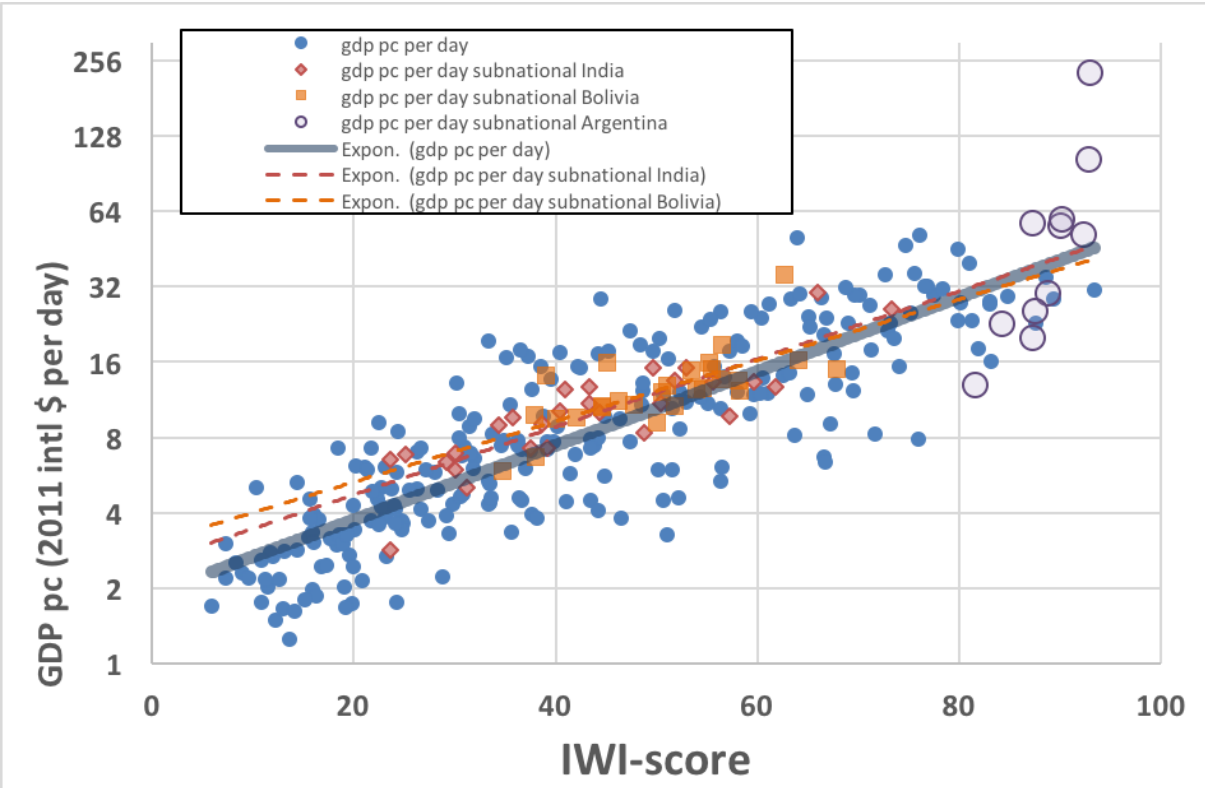
- For homes with IWI-score below 10: we followed the model less strictly, since the IWI-model can never imply an income below $1.5, even though many homes probably had lower incomes than that.

[1] Furthermore, independent valuations of the quality of specific assets were highly correlated to the reported income (per adult equivalent) even after controlling for the IWI-income. That mean that among homes with the same set of assets those with higher reported income had assets of better quality. So the two income indicators in combination contained information about the quality of assets.

Appendix 1: The IWI model and GDP per capita

To get a better picture of the IWI we will in this section plot average IWI scores against GDP per capita figures for countries and a selection of sub-national units. The global data lab provides average IWI-scores for a large range of low- and middle-income countries. Furthermore, for most countries they offer observations for a range of years. They typically also offer averages for sub-national regions. We merged the IWI country data with GDP per capita data from Gapminder World (2011 international dollars). For India, Argentina and Bolivia we also merged IWI-subnational data with sub-national GDP data (we choose India and Bolivia since we had that GDP data ready at hand, and Argentina because it was the only country with relatively high incomes with IWI data).

The data is plotted below. Each blue dot is a country for a specific year. So Angola, for example, is represented by two dots that represents Angola in 2000 and Angola in 2011. The other dots are the subnational regions for the three above mentioned countries (the grey dot in the top right corner is Buenos Aires in 2014).



The relationship is pretty much as one would expect. A relatively good correlation, but with a lot of variation in the individual case (i.e. income at each IWI score varies with a factor of about four). The grey line is the best fit for the country data (i.e. the blue dots), which does not differ much from the best fit for Bolivia or India. At the lowest IWI values the grey line seems to somewhat

overestimate the income (which seems plausible). More importantly, the IWI does not capture the really high incomes, as illustrated by the Argentinian provinces. This is entirely expected, as the IWI cannot go above 100. As soon as you acquired all the basic assets in the index you cannot rise further, even if you acquire a lot of even more "luxurious" stuff.

This line lies above the line we got from the Global data lab based on individual data. This is as expected since we use PPPs rather than exchange rates to transfer all the figures to dollar. Furthermore, we use GDP per capita aggregated to countries or provinces and they use income or expenditures linked to individuals.

We also estimated a simple model where I controlled for year. There was indeed an effect of that: income for a given IWI was lower in 2014 as compared to in 1990. This makes sense: as assets becomes more accessible over time the ownership of them spreads down the dollar street. However, the effect is too small to cause any concern.

Appendix 2 - Placing Poor Households in Dollar Street

The documentation provided by the Global Data Lab

Introduction

The position of each house in Dollar Street corresponds with the economic situation (standard of living) of the household living in the house. Poorer households are located more to the left and wealthier households more to the right.

To locate a house in Dollar Street we thus have to know its economic situation. In wealthier countries this is unproblematic, as household income can be used. Household income is the net daily income received by the household members in a normal year, whereby income from all sources (paid labor, self-employment, interest/dividend, unemployment benefits, pensions, etc.) is included.

In poor countries, household income is not a good indicator of the economic situation of households. In those countries, many people have no stable income, payment is often in kind, there is a large black economy, and few people have a labor contract. To indicate the economic situation of households in poor countries – and thus their position in Dollar Street -- an alternative indicator has to be used.

The indicator that is used is the International Wealth Index (Smits & Steendijk, 2015). This index does not look at the income received by the household members, but at the assets which they have. Those assets include the possession of durable goods (like a TV, refrigerator or car), whether the household has access to basic services like electricity and piped water, and characteristics of the house in which the household lives (number of rooms, quality of floor material and of toilet facility). Given that these assets are easily observable, the information needed for computing IWI can be reliably measured by an interviewer.

Households with more durables, better quality housing and access to basic services are supposed to be wealthier than households with less durables, lower quality housing and no access to services. A household's score on the International Wealth Index (IWI) can be computed by entering the information on the availability of assets, access to basic services and housing characteristics into a simple additive formula, which is the same for households from all regions of the developing world.

The household's IWI score obtained in this way runs from 0 to 100, with an IWI value of 0 for households having none of the durables, no access to public services and lowest quality housing and the value of 100 for households having all durables, access to services and highest quality housing. Households with similar IWI value are assumed to have reached the same level of material well-being, although depending on preferences and context their portfolio of assets may differ.

Given Dollar Street's aims to show the similarities and variations in material living circumstances across the globe, an asset-based wealth index seems a natural instrument for placing households within the street. People across the globe tend to buy a fridge, TV, cellphone, or washing machine if they have the means to do so. And also the wish for good quality housing, a flush toilet, electricity, and access to clean water seems universal.

IWI to Dollars

To translate a household's IWI score into its position in Dollar Street, the IWI score has to be translated into Dollars. Hence for each IWI value we have to determine the corresponding value in Dollars. This is not an easy task, as the prices of durables, building material, labor costs and services vary considerably across countries and regions. A simple one-to-one translation of IWI values into Dollars is not possible.

We therefore have chosen for an 'average' IWI-Dollar conversion based on household surveys for several low/middle income countries. For this purpose, we needed surveys that included both income/expenditure data as well as the asset data needed to compute IWI. Such surveys are rare. Still we were able to get access to such data for four countries, India, Malawi, Nigeria and Brazil.

Although these countries, strictly spoken, cannot be seen as representative of the developing world, they cover the three continents that constitute the Global South and differ substantially in level of development and culture. We therefore expect them to represent the broad range of socio-economic, demographic and cultural differences characterizing the developing world in a reasonable way.

The household data that will be used are from the India Human Development Survey 2004-2005 (IHDS, ihds.umd.edu), the Malawi Third Integrated Household Survey 2010-2011 (MTIHS), the Nigerian General Household Survey (NGHS) 2010-2011, and the Brazilian Census of 2000 (BC2000).

The IHDS is a nationally representative survey of 41,554 households in 1503 villages and 971 urban neighborhoods across India. The MTIHS is a national representative survey covering 12,271 Malawian households. The NGHS is a nationally representative survey covering 5000 Nigerian households. The BC2000 dataset is derived from the 1% public use samples of the Brazilian censuses of 2000 obtained from IPUMS (intrernational.ipums.org). To let each country count the same in the analyses, weight factors were constructed that gave each country a sample size of 25,000 households.

To determine the IWI-Dollar connection, first the household's IWI score was computed for all households in the datasets on the basis of the available asset information. Next a cross-nationally comparable indicator was constructed for yearly household income. For India and Brazil, this was done on the basis of the available household income variable and for Malawi and Nigeria on the basis of the available household expenditure variable.

To make the income/expenditure variables comparable and fitted for use in Dollar Street, we translated them into 2015 Dollars. For this purpose we used information on the historical exchange rates for the years of data collection derived from World Bank (2015). Because the durables included in IWI are tradable goods (TVs, cars, phones etc.), we used exchange rates instead of PPP-based rates (which are

adjusted for prices of non-tradable goods). We first converted the local currencies into dollars for the survey year on the basis of the exchange rates. Thereafter, we converted the survey year Dollars into Dollars for 2015, using the inflation calculator of the US Bureau of Labor Statistics (BLS, 2015).

Analysis

The relationship between IWI and income is studied with regression analysis, with log income as dependent variable and IWI as independent variable. We take log income as dependent variable, because the shape of the relationship between income and IWI is expected to be exponential. A change in IWI at the upper end of the scale is associated with a larger change in income than at the lower levels. This is because the amount of money needed to buy a cheap utensil, like a watch or a chair, is much less than the amount needed to buy an expensive utensil like a washing machine or a car.

The analysis made clear that the relationship is indeed exponential. The exponential model fitted the data significantly better than a linear model. The exponential model explained the variation in income very well, with an explained variance of about 50%. The estimated association between IWI and income is:

$$Log(income) = 6.29804 + 0.02918 * IWI$$

Based on this formula, we have computed the Dollar values connected to the IWI scores of 0 to 90. These values are presented in Table 1. The households with the lowest possible IWI value of 0 in our data have an average income of 1.5 Dollar a day in 2015 Dollars. Households with an IWI value of 10 have an income of 2 Dollar a day and those with an IWI value of 25 have about 3 Dollar a day.

The boundary of 5 Dollar a day lays a little above IWI 40 and the boundary of 10 Dollar a day at IWI 65. The highest presented IWI value of 90 is associated with an income of about 20 Dollar a day. With an average household size of about 4 adult equivalents (children counting 0.5) in low-income countries, this boils down to 5 Dollar per person per day.

Values over an IWI score of 90 are not shown, as the variation in income at the top of the IWI scale is too large to give a meaningful picture. IWI reaches its maximum as the household's material basic needs are met. This means that increases in income above a certain level do not lead to a higher IWI value. Between IWI 90 and IWI 100, therefore, all households earning more than 20 Dollar a day are concentrated.

Because the variation in income is higher at the higher IWI levels, the translation of IWI into Dollars becomes less precise there. At the same time, the measurement of income becomes more precise at the higher IWI levels, as income is more stable and better administrated there. This means that above a certain IWI level, the placement of households in Dollar Street can better be done on income instead of wealth. We have chosen to take this transition point at an IWI value of 65, or a household income of 10 Dollar a day. Hence household with an IWI value of up to 65 are ranked on the basis of their IWI score and households with an IWI value above 65 on the basis of their household income.

Conclusion

To determine the position of a household in Dollar Street we need to know its standard of living, expressed in US Dollars. For wealthy countries this is no problem, as the total net income earned by the household members can be used for this purpose. However, in low-income countries income is not a meaningful indicator of standard of living, as income is often fluctuating, unregistered, in kind, or illegal. To rank households according to their economic situation or standard of living, asset-based

wealth indices can be used. The International Wealth Index (IWI) is such an index which is comparable across time and place. Given that the assets used for computing IWI include durables and housing characteristics that are also used to compare households in Dollar Street, IWI seems a natural index for ranking the households in Dollar Street.

To be able to do so, a conversion scale for translating IWI into Dollars had to be created. For this purpose household-level income/expenditure data for India, Malawi, Nigeria and Brazil was combined and made comparable by translating it into 2015 US Dollars. By running a regression analysis on this data, we estimated a conversion formula. This formula was subsequently used to determine for each IWI value a corresponding household income value. Because at the higher wealth levels, the IWI-income translation is less precise and income measurement is better, a cutoff point had to be chosen above which household income would be used instead of IWI to place households in Dollar Street. This point was chosen somewhat arbitrarily at an IWI value of 65 or a household income of 10 Dollar a day.

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Table 1. US 2015 Dollar values connected to IWI values

IWI	Dollar	IWI	Dollar	IWI	Dollar
0	1.5	30	3.6	60	8.6
1	1.5	31	3.7	61	8.8
2	1.6	32	3.8	62	9.1
3	1.6	33	3.9	63	9.4
4	1.7	34	4.0	64	9.6
5	1.7	35	4.1	65	9.9
6	1.8	36	4.3	66	10.2
7	1.8	37	4.4	67	10.5
8	1.9	38	4.5	68	10.8
9	1.9	39	4.6	69	11.1
10	2.0	40	4.8	70	11.5
11	2.1	41	4.9	71	11.8
12	2.1	42	5.1	72	12.2
13	2.2	43	5.2	73	12.5
14	2.2	44	5.4	74	12.9
15	2.3	45	5.5	75	13.3
16	2.4	46	5.7	76	13.7
17	2.4	47	5.9	77	14.1
18	2.5	48	6.0	78	14.5
19	2.6	49	6.2	79	14.9
20	2.7	50	6.4	80	15.4
21	2.7	51	6.6	81	15.8
22	2.8	52	6.8	82	16.3
23	2.9	53	7.0	83	16.8
24	3.0	54	7.2	84	17.3
25	3.1	55	7.4	85	17.8
26	3.2	56	7.6	86	18.3
27	3.3	57	7.9	87	18.8
28	3.4	58	8.1	88	19.4
29	3.5	59	8.3	89	20.0
30	3.6	60	8.6	90	20.6