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Reference:

Marivoet Wim.- *Evolution in living standards in eight Congolese cities between 1975 and 2005*

Urban Forum - ISSN 1015-3802 - 26:1(2015), p. 15-38

DOI: <http://dx.doi.org/doi:10.1007/s12132-014-9230-8>

Handle: <http://hdl.handle.net/10067/1186080151162165141>

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Keywords

Household data - Coping strategies - Urban sector - Democratic Republic of Congo (DRC)

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Abstract

In this article, we shed light on the changing living conditions between 1975 and 2005 in eight major cities in the Democratic Republic of Congo (DRC). To this end, household data from two sets of surveys have been combined and analyzed in terms of budget and asset ownership. Although this exercise is seriously constrained by methodological difficulties, some salient facts do emerge. To begin with, the urban sector does not seem to be much affected by the formal crisis the country went through. Apart from in Bukavu and regardless of a substitution effect between technological and non-technological consumer goods, no general decrease in consumption or assets occurred over these past three decades. An explanation for this remarkable result could be found in a more efficient use of the food budget as well as a further dependence on informal income strategies. Linked to the former explanation, this study pointed to a general replacement of starchy staples by cereals, and, to a lesser extent, (palm) oil. Additionally, a marked increase in the budget share spent on education also seemed to be a common phenomenon for all eight cities. And finally, changes in economic geography seem to have structured the evolution of (mainly technological) assets owned by households quite well. Apart from these general tendencies, this study above all revealed that each city has its own particularities, which deserve to be further researched.

1. Introduction

November 30, 1973. The former president Mobutu Sese Seko promulgated a set of economic measures to further affirm the country's emancipation vis-à-vis other countries in general and Belgium in particular. After stabilizing the political arena following the chaotic first years of independence in 1960 and having proclaimed the return to cultural authenticity in 1971, Mobutu took the decision to nationalize important parts of the Zairian economy, until then largely controlled by Western (mainly Belgian) companies. These measures (known as "Zairianisation") tried to unilaterally address some unsettled economic disputes, originating from the final negotiation talks with the former motherland. This policy, whose consequences were initially assessed as purely cyclical and only affecting the economic sphere, soon proved to be a perfect recipe for a complete societal disaster (Young and Turner 1985:66).

Without a doubt, the measures undertaken have completely deprived the country of its productive basis, as close relatives of Mobutu's were directly appointed heads of the newly nationalized companies – people often without any proper experience or willingness to resume economic activities. In addition, the petrol crisis of 1973 and especially the fall of world copper prices from 1974 onwards added to a further decline in public revenues, making the regime resort to alternative ways to finance their public deficit. One way was to rely on external credit, which laid the foundation of the Congolese debt crisis, a burden from which the country was only relieved in November 2010 (Marysse et al. 2012). Another strategy was to rely on the money press – used at several occasions and symbolizing perfectly the disastrous economic and monetary policy of the Mobutu regime¹.

Despite different attempts by international donors to revive the Zairian economy, it was only after the end of the Cold War when Mobutu got politically isolated that his regime started to stagger. Meanwhile, widespread corruption ("*le mal zairois*") and economic informalization became *modi vivendi*; for some they represented genuine survival strategies; for others they were a means to accumulate more power and money. The political vacuum created by Mobutu's international isolation heralded an even more catastrophic era by the importation of interethnic tensions from Rwanda, which provoked the outbreak of two Congo Wars between 1997 and 2003². In 2005, the political transition officially ended with the approval of a new constitution, which anticipated the

¹ For more details on this policy, see Maton (1998) and Bézy et al. (1981).

² For a detailed historical account of this period, see Reyntjens (2009).

organisation of the first democratic elections in more than 40 years. These elections brought Joseph Kabila to power as the first president of the Third Republic.

The formal economic heritage of these three turbulent decades can be read from Figure 1, which displays the evolution of per capita GDP for each of the Congolese provinces. With annual growth rates ranging from -5.3% for Katanga and -1.8% for the larger Kivu region, it is clear that all provinces were greatly affected by the formal economic crisis. However, over the complete period, richer regions were manifestly hit harder than poorer ones, resulting in a much less unequal distribution of welfare. For some provinces, the formal end of the war in 2003 also coincided with a small resumption of economic activity, which was particularly true for those regions (like Kasai-Oriental, Bandundu, Équateur and Orientale) which had suffered greatly from isolation during the war years. As a matter of fact, the second Congo war (1998-2003) was characterized by a deadlock situation and a front-line dividing the country in two equal parts which blocked all commercial traffic (mainly fluvial) between the hinterland provinces and their major city clients (Tollens 2003).

<<< Fig. 1 >>>

Linking two sets of budget surveys, one covering the period 1975-6 and the other 2004-5, this study will analyze how this formal economic crisis affected people's living standards in eight cities of the Democratic Republic of Congo (DRC). Notwithstanding the series of events which occurred from the mid-1970s onwards and which plunged the country into a long and deep crisis, the inhabitants of Kinshasa seem to have digested this crisis relatively well (De Herdt and Tshimanga 2005; De Herdt and Marivoet 2007; De Herdt et al. 2008). In these studies, the *miracle of Kinshasa* found its explanation in a massive reliance by the population on activities embedded in the informal sector as well as in a more efficient use of the family's food budget. A third explanation, namely a reduction of inequality which implies a sort of progressive redistribution between richer and poorer layers, seemed much less convincing: depending on the data source, the reference period or the inequality measure, one could either observe a status quo, an increase or a decrease in inequality in Kinshasa.

The data at our disposal allow us to verify whether and to what extent this miracle can be generalized to other cities of the country. In doing so, we would like to follow a methodology which goes beyond the mere dimension of the budget by also analyzing the evolution in asset stock held by households over time. Indeed, the

resilience to crisis observed in Kinshasa has been mainly informed by data on (food) outlays and nutrition, which may conceal a substantial depletion of household assets. This of course requires us to revise the allegedly miraculous character of what exactly happened in Kinshasa. The fact that an introduction of household assets into the analysis may be very informative is proved by a rare study on geographical profiling of poverty in the DRC (Marivoet and Keje 2011): the capital of Kinshasa, being among the least well nourished urban centres, also seems to be most endowed in terms of household assets. Therefore, by combining household data on budget and assets, this study seeks to obtain a more comprehensive overview of the evolution in living standards as well as the exact coping mechanisms to which Congolese families have resorted in some urban centres between 1975 and 2005.

2. Data and methodology

2.1. Survey data of 1975-2005

The underlying data used for this study are, on the one hand, a series of six demographic and budget surveys covering the urban sector of Western Zaire, complemented with two similar surveys of Kisangani and Bukavu, and all executed in the period 1975-6. This series of surveys has been largely financed by SICAI, supervised by Prof. Houyoux of the Catholic University of Louvain (UCL) and executed by the country's National Institute of Statistics (INS). The ex-post reference for this study on the other hand is the nationally representative 1-2-3 Survey (2004-5), financed by a consortium of multilateral and bilateral donors, commissioned by the piloting unit for the country's first PRSP (UPPE-SRP) and executed again by statistical department of the country (INS). Although the 1-2-3 Survey allows studying the entire urban sector, we will limit our analysis here to the following eight cities: Bandundu, Bukavu, Kananga, Kikwit, Kinshasa, Kisangani, Matadi and Mbandaka. Figure 2 provides a geographical overview of the eight cities' location and the number of households surveyed respectively in 1975-6 and 2004-5.

<<< **Fig. 2** >>>

Directly comparable when methodology and timing of survey execution are very similar, it goes without saying that comparing living standards over 30 years is much more challenging. To begin with, the underlying

methodology of both sets of surveys is quite different, since, for one thing, they were not conceived to be compared with one another. This observation however should not necessarily prevent us from putting them into perspective, but should rather prompt us to be very cautious and explicit about the methodological procedures followed³. For this reason, the following two sections (Sections 2.2. and 2.3.) will devote much attention to concepts and methodology. Evidently, on some occasions we will be obliged to rely on second-best options or shortcuts. Apart from these more technical aspects about methodology, the present study also faces a more substantive challenge related to the extensive time period considered. More precisely, how to measure welfare and poverty over time is a question in fact subject to time itself, especially given the technological revolution which gave rise to a number of inventions – non existent in 1975 but these days almost taken for granted as basic consumer goods. In order to provide some foundation for this discussion, the present study will rely much on the Capability Approach (Sen 1985). The notion of capabilities (i.e. the various doings and beings a person can pursue) will theoretically allow the inclusion of context-specific information about both time periods without necessarily rendering the analysis arbitrary (see next section).

Although multiple dimensions exist and are used to measure people's living standard, the present study will mainly focus on budget information and household wealth; first separately, then by combining both dimensions.

2.2. Methodological notes on budget

In her study about the real economy of Zaire, MacGaffey (1991) advocates looking well beyond the formal sector, by also considering informal economic activities, in order to assess the overall performance of an economy. The most evident starting point to respond to such a concern is to analyze people's household budget. Indeed, the budget dimension allows probing the economic welfare level of a household (achieved either by engaging in formal or informal activities, or both); it is equally less sensitive to seasonal effects and its survey provokes less resistance compared to surveying people's revenue. Over the years, this concept has been further refined; departing from a measure of real expenditure to the notion of consumption, and by applying detailed

³ Here, one can already mention that the 1-2-3 Survey, strictly speaking, is only representative of the sector level within each of the 11 provinces. As such, the urban sector in each province often represents several cities at once, which are here analyzed separately. This also explains why the number of households surveyed is generally lower in 2005 compared to 1975.

equivalence scales for better neutralizing diversity in size and composition of households⁴. Exactly at this level, a first methodological problem arises to link the 1975 surveys with the one executed in 2005: where the 1-2-3 Survey allowed imputing a fictitious house rent to the outlays of those households owning their own house as well as applying more sophisticated equivalence scales, the necessary data to pursue a similar procedure were simply missing for the 1975 surveys. Facing these issues of incompatibility, we saw no other option than to remove these refinements from the 1-2-3 Survey in an attempt to restore comparability with the 1975 data⁵.

A second problem which complicates comparability between these two time periods is the monetary volatility which much characterized the Zairian/Congolese economy: since independence, the country has witnessed four different national currencies, several devaluations and very fluctuating inflation rates with some episodes of hyperinflation (Maton 1998). Given this turbulent monetary history, how should one assess the evolution in household budget from 100 Makuta (K) (or 1 Old Zaire) in 1975 to 1 Congolese Franc (CF) in 2005? Although one could opt to evaluate the budget data at constant prices and currencies, the value of this method ultimately depends on the reliability of the underlying price indices and currency converters used. Moreover, this correction at best only controls for differences in purchasing power and ignores the real possibilities that such power may entail for people in a specific context. Here, one can refer to the general criticism put forward by Sen (1985) against money-metric approaches of welfare, which only measure purchasing power instead of measuring what people can actually do and be (i.e. their capabilities) by employing their budget in a specific context.

Given the objective of our analysis, namely comparing living standards over a 30-year time interval, these contextual aspects cannot be downscaled. On the other hand, too big a focus on the many contingent circumstances is not an option either because it will undermine any basis for comparison, thus making this analysis simply impossible. An intermediate position to reconcile the apparently conflicting concerns for specificity and consistency⁶ is to fix a poverty threshold in the capability space, then to derive its contextual translation in budget terms and finally to employ the resulting money-metric thresholds as budget deflators. This particular method may fit well under what Sen has labelled “the indirect approach” (Sen 1999:83-84). The

⁴ For more information about these microeconomic concepts, see Deaton (1997).

⁵ Of course, this strategy is not without risk: differences between cities and changes over time with respect to the proportion of owners and tenants will probably bias final welfare rankings. In order to better assess this potential bias, a detailed analysis of the housing market in each city (and its evolution over time) is required, though this falls outside the scope of this study.

⁶ These concerns also refer to two desirable characteristics of poverty lines. Where ‘specificity’ claims poverty lines to be context-sensitive, ‘consistency’ requires them to be mutually comparable. For more information, see Ravallion and Bidani (1994:75-77).

practical elaboration of this method together with its empirical limitations have been discussed in more length by Marivoet and De Herdt (2014).

Applying this methodology to both sets of surveys, we obtain the results as summarized in Table 1. The first and third column present for each city and year the minimum daily budget in current prices and currencies to avoid poverty. For example, where the citizens in Matadi and Kinshasa in 1975-6 respectively needed 43.04 K and 64.78 K to avoid poverty on a daily basis, their descendants 30 years later now require a daily budget of 438.24 CF and 538.11 CF. Since each poverty line has been constructed based on the same nutritional requirements, one can make a case for using their pairwise proportions as context deflators to neutralize differences in prices and needs, whether in space or through time. Using Kinshasa 2004-5 as a reference, the corresponding deflators are then summarized in the second and fourth column of Table 1. The discussion of results in Section 3 will be based on budget data corrected by this set of deflators.

<<< **Table 1** >>>

2.3. Methodological notes on assets

Apart from household budget, this study will also examine the evolution in household wealth. Contrary to the money-metric dimension, asset ownership not only allows us to capture more accurately the multidimensional concept of welfare and poverty, its measurement also seems to entail fewer methodological problems (Moser and Felton 2007:1-2). These intrinsic claims in favour of assets may join the arguments of those who advocate a more complementary perspective on household wealth (i.e. besides budget information). In this respect, Carter and Barrett (2006:180) make use of household assets to distinguish stochastic from structural poverty transitions. To this end, an indexation procedure is required to summarize household wealth into a single asset index. For all these reasons, asset-based approaches have recently regained importance in the field of poverty measurement.

Again, a number of methodological challenges emerge when trying to link the surveys of 1975-6 with the one conducted in 2004-5. First of all, the set of household assets surveyed in both instances are not the same. For example, where the surveys in 1975-6 did not check whether families owned a fan or not, the 1-2-3 Survey failed

to query the ownership of a *pousse-pousse*⁷ – two widespread assets for both time periods. Secondly and in line with our reasoning on purchasing power, it is not possible to derive market values for household assets due to missing or unreliable prices (which at the same time would have solved our indexation problem). Moreover, even if this had been possible, a similar sensitivity of assets to context (as we pursued for the budget dimension above) would probably have been insurmountable. To be sure, different circumstances often necessitate different resources, whether in terms of available budget and/or assets. However, reconciling the concerns for specificity and consistency in the asset dimension is much more problematic (compared to the budget dimension) in the absence of a central functioning (like nutrition) and corresponding metrics (like calories and proteins). Therefore, applying a deflator-like methodology (i.e. setting poverty thresholds and deriving minimal corresponding asset quantities to deflate asset ownership) simply seems unfeasible. Furthermore, if one considers the many technological inventions which certainly increased people’s capabilities over time, how should one consistently evaluate these new capabilities against those which already exist.

Given these many problematic features in assessing household wealth over time, the present study will limit itself to a set of assets which occur in both time periods. Despite the fact such an approach will probably underestimate the living standards of the urban dwellers of 2004-5 compared to those of 1975-6, this bias may be rather limited if one assumes a positive correlation to exist between newly introduced and existing household assets – each time the new good also entails a capability increase. In other words and according to this assumption, discarding computers from our list of common assets (because not surveyed in 1975-6) will not much bias our results; (i) either because the increased capability related to ownership of this new good will also be tangible through ownership of other (older) assets, or (ii) because the new good simply does not represent an increase in capability, but rather entails a more contemporary way of attaining the same capability level. Of course, the same assumption makes abstraction of possible improvements in terms of asset quality over time as well as pure substitutions of older by newer consumer goods.

Table 2 groups all the different index components used in this study to analyze the evolution in asset ownership. To begin with, we will analyze the evolution of housing quality by means of six variables. Given the elimination of imputed house rents to increase comparability between both survey series, we are satisfied that we were able to include a variable on the occupation status of the dweller. As such, the potential underestimation of the

⁷ A *pousse-pousse* is a big iron non-motorized cart used in Congolese cities to transport all sort of merchandise.

household budget of house-owners is somewhat compensated for in the asset dimension. Secondly, we will also examine the change in ownership of household durables. Here, we distinguish the more technological durables from durables which are less technological. As mentioned above, we will anyhow limit ourselves in the first category to durables which already existed in 1975, like a television, a radio, a motorcycle, etc. The second category mainly contains furniture, but also a bicycle figures within this list. This distinction based on technology allows us to verify whether a certain substitution occurred over time between both categories (which in turn may also inform us about the validity of the assumption used). And finally, we will study some aspects of human capital, such as educational attainment of the household head and nutritional status as proxied by calorie and protein intake.

<<< Table 2 >>>

Although individual inspection of each index component of Table 2 reveals the most detailed information about the evolution in asset ownership, it is often more practical to construct asset indices – especially when this type of information has to be combined with budget data. To this end, various data reduction techniques exist, each of them differing in how weights are estimated and assigned to ownership of assets. The technique used for this study is the ‘polychoric’ extension of Principal Component Analysis (PCA), developed by Kolenikov and Angeles (2009). This extension allows us to use discrete and continuous variables at the same time, while assuring robust and uniform weights for the first principal component. These latter weights, which capture most of the overall variation produced by the underlying index components, are then used to construct four composite indices⁸ – one for each asset type identified in Table 2.

3. Results and discussion

In this section, we will discuss the evolution in living standards between 1975 and 2005 in each of the eight Congolese cities by taking stock of the methodological concepts introduced above. Firstly, we will perform a money-metric welfare analysis by examining each of the eight income distributions for both time periods using a

⁸ More particularly, a further standardization is imputed on the initial indices generated by polychoric PCA, where the minimal value of the sample has been set to 0 and the mean value to 1. For more information on the exact procedure followed, see Marivoet and Keje (2011:19-20) who followed a highly similar methodology.

standard set of distributional tools. At the same time, we will also examine the (change in) composition of food and non-food consumption. Secondly, we will analyze the evolution in asset ownership along each of the four asset types identified in Table 2. And finally, we will combine both dimensions, budget and assets, to distinguish stochastic from structural poverty transitions.

3.1. Budget analysis

The most striking observation when looking at the first column of Table 3 is that the poverty incidence in general has barely changed over three decades of profound crisis. More in line with expectations is the city of Bukavu, where poverty increased from 62 % in 1975 to 86 % in 2005, an annual growth rate of 1.15%⁹. Apart from this remarkable resilience in general, one should also be amazed by the relative position of each city. Previous welfare studies on the DRC (Marivoet 2009; Marivoet and Keje 2011) have already nuanced the allegedly enviable position of Kinshasa compared to other provinces; pointing to the fact this urbanized province is even relatively more affected by poverty than for example the province of Équateur (an observation which largely runs against popular belief). Limiting ourselves to the eight cities considered here, this classification seems to be reproduced: the city of Kinshasa, with a poverty headcount around 73%, is a very meagre performer compared to Mbandaka (the provincial capital of Équateur) where poverty seems to be the least pervasive of our sample with an incidence of 61%. Apart from Bukavu, but sharing a similar poverty level as Kinshasa, the cities of Bandundu, Kisangani and Kikwit are among the urban sectors most affected by poverty. Although these results may seem very surprising (especially given the many unfavourable events which took place in the meantime), four hypotheses can be put forward to elucidate this urban *Congo puzzle*.

A first hypothesis concerns the ever-increasing degree by which the Congolese economy has informalized over time, thus compensating for the economic decline which primarily affected the formal sector. Following a study which compared macro- and micro-economic data over the same time period (De Herdt and Marivoet 2007), this thesis could already be validated for the city of Kinshasa. Secondly, a reduction of inequality might be another realistic hypothesis underlying the fairly stable poverty statistics. According to this hypothesis, the formal

⁹ Despite being unable to clearly identify the problem, we would like to call into question the reliability of the 1-2-3 Survey executed in South Kivu. Given the fact this province largely shared the same troublesome history, it is at least very unlikely that South Kivu would be much poorer than its neighbouring provinces Maniema and North Kivu, as some other studies have shown (République démocratique du Congo 2006; Marivoet 2009).

economic crisis has mainly hit the richer layers in the urban societies, leaving the poorest segments largely unaffected. Although this same Kinshasa study did not point to any progressive redistribution between 1975 and 2005 (De Herdt and Marivoet 2007), it remains an empirical question whether the other cities in our sample became more equal over time. A third hypothesis why many urban dwellers have survived the long and deep crisis the country went through, relates to a more efficient use of the family's food budget. By resorting to a more nutritious diet, people may have buffered a real income decline. Given the methodology used to increase comparability over time, this change in diet composition represents an upward revision of the budget distribution through the application of a more favourable deflator for the year when the food budget has been rationalized. In Kinshasa, this hypothesis already seemed to apply: the daily food bowl in Kinshasa over the past 30 years has considerably changed from cassava to more nutritious food items such as maize and rice (De Herdt et al. 2008). And finally, poverty headcounts could also remain largely unchanged because families were able to smooth their consumption level by depleting their household asset base. This fourth hypothesis assumes that real income declines were compensated for by revenues generated by a depletion of consumer or producer durables.

Whereas the first three hypotheses linked to the budget dimension will be checked in the remaining part of this section, the last hypothesis on asset depletion will receive due attention in the following section.

By considering Table 3 again, which also provides information on changes in mean budget and inequality, we can start to verify the validity of the informalization and redistribution hypothesis. For Mbandaka, Kinshasa, Matadi and Kananga, one can observe stability for both these indicators over the time period considered, which is in line with the first hypothesis but disconfirms the second. In other words, the poverty incidence in these cities barely changed between 1975 and 2005, simply because the underlying budget distribution didn't either. Consequently, the formal income loss described by Figure 1 has apparently been completely compensated for by an increase of revenues generated in the informal sector. On the other hand, for Kikwit and Bandundu both the hypothesis of informalization and that of progressive redistribution seem to apply: in both urban centres inequality markedly decreased while mean budget remained stable. In sum, whereas informalization has been a fairly successful response to crisis for most urban centres analyzed here, redistribution was clearly much less as it only occurred in two major cities of the province Bandundu. With respect to Bukavu, neither of both theses applied given the halving of household incomes combined with a substantial increase in inequality – an evolution yet more in line with the country's and regional history.

<<< **Table 3** >>>

Now, let us turn to the final budget hypothesis which prescribes a more efficient use of available income sources to buffer the most negative consequences of the crisis. To begin with, Table 4 presents for each city and time period the composition of household budget along various consumption categories. By analyzing the evolution in food budget relative to the overall consumption level (as described in the previous table), one can immediately see that “Engel’s law” (Deaton 1997:7) is far from binding. This law stipulates that the share spent on food will decrease with increasing income levels, *all things being equal*. However, given the extended time period of this study coupled with the structural changes that occurred in the meantime throughout Congolese society, it is obvious that very little would have remained equal for our eight cities. Thus, instead of seizing the general violation of this law as a sort of proof for a possibly biased methodology, we rather prefer to make use of it as a reference to study these societal changes, which in turn may also increase our understanding of the underlying budget methodology used.

<<< **Table 4** >>>

For the majority of cities (except Bukavu), where general welfare levels largely remained stable over the 1975-2005 period, we can notice, by examining the change in food budget, that Engel’s law still applied to some extent for Kikwit, but was already somewhat less valid for Kinshasa and Matadi, and certainly not for Mbandaka, Bandundu and Kananga. Indeed, between 1975 and 2005, the inhabitants of Kinshasa and Matadi spent 3-4% less on food and those living in Mbandaka saw their food budget decrease by more than 8%. These observations are probably partly due to the general retreat of the state from the education sector, which returned the bill of schooling to the households themselves (De Herdt 2011; De Herdt et al. 2008). This effect can be clearly observed by considering the budget share spent on education: for Kinshasa, Matadi and Mbandaka, this share increased by more than factor 6. For the latter city, one can also see a serious increase (from 1.6% to 3.8%) in relative transport expenditure. For Kikwit on the other hand, families did not finance their increased schooling costs by curtailing their food outlays, but rather by halving their clothing expenditures (from 6.8% to 3.3%).

For Kananga and Bandundu, the overall stability in mean budget levels seemed to be associated with an increase in food share. This latter observation is all the more surprising since families in these two cities also became *de facto* financially responsible for the schooling of their children (as highlighted by increased education shares). However, a more detailed analysis of the household budget for both cities revealed that the categories of “auto-consumption” and “received presents in kind” strongly decreased over the period considered. Assuming these categories are predominantly food related, it is already much less surprising to see the food share increase¹⁰.

And finally for Bukavu, the serious decline in welfare levels observed between 1975 and 2005 did not result, as Engel’s law would suggest, in an equally dramatic increase of the budget share spent to food. As a matter of fact, this food share even decreased by more than 5%, which predicts little good in terms of people’s food security in this particular city. Apart from doubts concerning the quality of data coming from South Kivu (cf. above), one can again refer to the education sector whose financing largely became a private matter, as can be noticed from the steep increase in the corresponding share in household budget from 0.5% to 6.1%. Somewhat logically given the fixed character of many housing costs, the proportion spent on this expenditure category more than doubled from 7.7% to 15.4%. Despite a missing survey report for Kisangani in 1975, we are able to analyze the proportional changes in the household budget. In any case, the inhabitants of this city clearly saw themselves obliged to curtail their expenditure on clothing and transport, from around 7% to merely 4%, which in part allowed families to finance their children’s increased schooling costs (from 0.1% to 3.3%).

Without a doubt, the extent one can resort to structural changes in Congolese society (like the state’s abandoning of public services) to explain deviations from Engel’s law, is of course limited. Any other statement would assume food security to be a second order human need, perfectly adjustable according to changing circumstances. On the other hand, a more efficient use of the food budget will nevertheless increase the capacity of households to respond to these societal changes without necessarily impairing their nutritional status. Indeed, several studies (De Herdt and Tshimanga 2005; De Herdt et al. 2008) have revealed to a drastic shift in food basket in Kinshasa, where the substitution of cassava by maize was most exemplary. Now, based on Figure 3 which displays the food basket per city and time period together the overall daily calorie intake per person, we can verify whether this diet transformation also occurred in other Congolese cities beyond the capital.

¹⁰ Of course, these city-specific phenomena certainly deserve to be researched in more detail.

What Figure 3 immediately makes clear is that the change in food diet is far from solely a Kinshasa phenomenon, but also seems to apply – albeit in different degrees – in all other cities of our sample (except for Mbandaka). More specifically, to meet their food energy needs, urban dwellers in 2005 relied substantially more on cereals and less on starchy staples compared to 1975. This relative increase in calories from cereals was most pronounced in Bandundu (from 4% to 21%) and much less manifest in Matadi. Remarkably, in Kananga where the food diet was already much based on maize in 1975, the share of calories obtained through the consumption of cereals even doubled over this 30 years time interval. With respect to the calorie share from starchy staples, the relative reduction lies in between 55% (for Kinshasa) and 21% (for Bandundu). This general substitution of starchy staples for cereals is also accompanied by an increased calorie dependence on (palm) oil, which also seems to be the case in Mbandaka.

Now, whether this diet transformation also reflects a more efficient use of the food budget in order for households to be able to cope with the structural changes in society, is something one should analyze by closely inspecting the evolution in food prices. Given such an analysis would be at least as challenging as the budget methodology developed above, we will opt here to use a shortcut and contrast the overall changes in calorie intake to changes in food budget. By combining information from Table 3 and 4 as well as Figure 3, one can conclude that the inhabitants of Kinshasa, Matadi and certainly those of Mbandaka and Bukavu have made a more economical use of their food budget. For the first three cities, the absolute loss in food budget was fully compensated for by this dietary shift, as can be observed from the stability in calorie intake in Kinshasa (from 1386 to 1351 kcal), in Matadi (from 1624 to 1709 kcal) and in Mbandaka (from 2032 to 2237 kcal). For Bukavu, even though the absolute food budget of its inhabitants has more than halved between 1975 and 2005, the decline in calorie consumption was less sharp (from 1781 kcal to 1069 kcal), again pointing to the economical motive behind this diet change.

<<< **Fig. 3** >>>

By contrast, the dietary change observed in Kikwit and Kananga was much less economical, and even detrimental for the city of Bandundu. For the first two cities, one can indeed observe a clear connection between changes in the absolute food budget and changes in calorie intake, Kikwit largely remaining stable on both indicators and Kananga increasing its food budget and calorie intake by the same token. On the other hand, the

citizens in Bandundu were unable to substantially increase their food energy, despite the larger budget which was allocated in this respect.

Somewhat remarkable is the poor nutritional status of people living in the Congolese capital, both in 1975 and 2005. At the other end of the scale, one can find the inhabitants of Mbandaka who apparently were and still are among the most well nourished in the country.

3.2. Asset analysis

In order to go a bit beyond the money-metric dimension of welfare to assess people's living standard over time, this study also examines changes in asset ownership of households. In section 2.2., we already identified four sets of index components, one for every asset index to be constructed using the polychoric extension of PCA. Then, Table 5 summarizes for each category the average standardized asset index per city and time period. This table also provides mean estimates for the aggregated asset index, which is derived for each household by simply averaging the asset indices of the previous four categories. This latter choice corresponds to valuing each of the four asset dimensions the same, which, although equally arbitrary, is undoubtedly more transparent than for instance running a polychoric PCA on all 23 underlying index components. In line with Table 5, the following changes in asset ownership can be observed.

To begin with, asset ownership as measured by the aggregated index increased significantly between 1975 and 2005 for the inhabitants of Matadi and Kinshasa, and to a lesser extent also for those in Kikwit and Bandundu. This asset drift was mainly driven by the introduction of more technological consumer goods in these four urban societies, combined with a substantial increase in terms of human capital (except for Kinshasa and Bandundu) and housing quality (except for Kikwit). By contrast, but much in line with the evolution in welfare levels, the citizens of Bukavu on average saw their household wealth decrease over time, especially for housing and the category of non-technological durables. Apart from the human capital category (for which no index could be derived in 1975), Kisangani seems to share a similar evolution in overall household wealth as the provincial capital of South Kivu. Somewhere in between these extremes, the cities of Mbandaka and Kananga are rather characterized by a status quo in household wealth, as measured by the aggregated asset index. This overall

stability in asset ownership can be largely broken down into a safeguarding of housing quality, a drift in human capital and a depletion in non-technological goods.

<<< **Table 5** >>>

Notwithstanding these city-specific trajectories in asset ownership between 1975 and 2005, three common characteristics stand out. Firstly, given the asset drift in technological goods as observed in many cities combined with an equally general depletion in non-technological items¹¹, one can assume that a direct substitution took place between these two asset categories. More specifically, urban citizens on average saw their ownership of (mobile) phones and also that of televisions sharply increase¹² at the expense of, especially, couches, wardrobes, beds/mattresses and chairs. In Matadi, this substitution was even more pronounced as people also experienced increased ownership of radios, cooking units and refrigerators as well as further asset depletion in terms of tables. An exception to this assumed substitution relates to the use of transportation goods, where the reverse tendency seems to apply: a (slight) reduction in ownership of motorcycles, cars and vans, in favour of a much more frequent use of bicycles. The latter seems to be especially the case for Mbandaka, Kisangani, Kananga and Bandundu, where ownership rates more than doubled to 30%, 38%, 41% and 45% respectively in 2005. This in turn explains, except for Mbandaka, why the budget share spent on transport in the latter cities also decreased (see Table 4).

Secondly, the change in ownership of technological goods observed in each of these eight cities seems to be largely structured by changes in relative market integration. To be sure, the increase in ownership for technological assets was clearly most pronounced for the international port of Matadi (from 0.73 to 2.32), where these goods first arrive; followed by Kinshasa (from 0.89 to 1.85), to where they are directly transported afterwards. This latter inter-city connection has always been among the most vital to Kinshasa's survival, and therefore fairly well maintained over the years. In contrast, the country's transport system further inland has largely been abandoned during the crisis years, which, together with increased informal taxations, resulted in substantially higher transportation costs for the more isolated regions. For this reason, one could observe the introduction of technological goods to be much less sharp in Bandundu, Kikwit and Kananga. For the more

¹¹ Though, not all these changes were significant at a 0.05 level.

¹² For Kikwit and Kananga, one could observe an increase in radio ownership instead of a larger command over televisions. In Mbandaka, neither trend seemed to have occurred.

isolated cities of Mbandaka and Kisangani, one could even observe a small depletion in terms of cooking units, refrigerators, cars and vans for both cities, coupled with an almost complete disappearance of motorcycles from the city landscape in Mbandaka.

And thirdly, the educational attainment of the household head in all eight cities seems to have improved spectacularly between 1975 and 2005¹³. Whereas the average urban household head enjoyed 5.5 years of schooling in 1975, three decades later this rate had almost doubled to 9.7 years. Apart from this drastic increase, inequality in average educational attainment between cities proved to be quite small as well, with a maximum difference of 2 years between Bukavu (8.5 years) and Matadi (10.5 years) in 2005. In terms of overall human capital, this strong improvement in education was either consolidated, nullified or completely reversed, depending on changes in nutritional status in each city. The first seemed to be the case for Kikwit, Matadi, Mbandaka and Kananga, where calorie and protein intake each time largely remained stable or improved slightly. For Kinshasa and Bandundu, the overall progress in educational attainment seemed to be largely nullified by a marked decrease in protein intake. And in Bukavu, the evolution in human capital even pointed to a small (yet not significant) deterioration, which proved to be the result of a strong reduction in calorie and protein intake.

To conclude this section, we would like to nuance this overly positive outlook a little; as if the formal crisis between 1975 and 2005 hardly left any trace in terms of people's wealth; let alone that such crisis did not prevent many households from (considerably) *expanding* their asset stock, as observed in several instances. This observation is all the more surprising given the fact this study limited itself to those assets which figured in both survey sets. As a result, we have probably underestimated (at least a bit, see methodological comments above) the real wealth status in 2005 of those urban citizens owning computers, DVD players and other high-tech equipment. On the other hand, we were unable to include comparable information on several other types of capital, like social and environmental capital. For this latter type of capital especially (which may cover access to all sorts of public facilities), we think we have largely ignored an important aspect of where this crisis has been most substantial – a dimension already well at play when linking changes in ownership of technological goods to changes in relative market access. Moreover, household questionnaires generally do not (accurately) capture

¹³ This improvement in educational attainment and what it entailed in terms of economic opportunities may explain why families over time have spent an increasing share of their budget on schooling in order to compensate for the diminishing involvement of the state in this sector.

changes in asset quality: a house made of bricks with a galvanized roof in 1975 will most likely keep its survey characteristics three decades later, despite its probably more dilapidated condition. In a similar vein, this argument may equally apply to many other assets as well, such as a car which still functions after its thousandth repair, but which is equivalent – according to many household surveys – to a brand new jeep with four-wheel drive and air-conditioning.

To be sure, if any asset depletion occurred between 1975 and 2005, it would have been either in terms of non-technological goods, environmental capital or asset quality (the latter being a kind of transversal depletion). For the first category, we were indeed able to observe a generalized decrease for many cities. For the second and third category, the arguments provided were much more indirect and/or driven by methodological concerns, rather than by empirical data. In sum, as far as these latter arguments are unconvincing to underscore that some real asset depletion might still have occurred beyond what we were able to measure, one cannot but be surprised by the marked resilience in wealth characterizing the urban Congolese society since 1975.

3.3. Combining budget and assets

The previous two sections provided a detailed description of the evolution in living standards between 1975 and 2005, by consecutively analyzing the level and composition of people's budget and asset stock. In this section, we will combine both these dimensions in order to be able to distinguish stochastic from structural poverty transitions. In this complementary view, the budget metric remains the chosen dimension to identify the poor while information on assets adds a layer on the transient character of this poverty (Carter and Barrett 2006). As a result, poverty is stochastic if a family needs to survive with a poor income level while owning a minimal asset stock to either buffer further income shocks or to escape poverty by employing it in a more productive way. If, on the other hand, a poor family cannot rely on such a minimal amount of assets, this household is probably trapped in a more structural form of poverty. In Figure 4, changes in mean budget and asset levels are traced for each of the eight cities between 1975 and 2005. Based on this figure, we will examine the general evolution in living standards over these three decades, while at the same time assessing the relative position of each city.

What is immediately striking when looking at Figure 4¹⁴, is the marked progress made by Matadi both in terms of assets and budget. This performance is further also accompanied by a more efficient use of people's food budget while limiting at the same time the extent of budget inequality. A similar trajectory but less pronounced applies to Bandundu where households over time experienced a small increase in budget and asset ownership. Moreover, this average improvement even turned out to be significantly better distributed over the inhabitants of Bandundu, which in turn had a positive impact on the city's poverty headcount (see *infra*).

Another typology stemming from Figure 4 is that of Kinshasa and Kikwit, where asset ownership (strongly) increased and budget levels largely remained stable. Although the asset drift observed in Kikwit was less pronounced, its increase was much more equally spread over the four asset categories identified (except for housing quality). By contrast, in Kinshasa the asset drift was uniquely due to a steep increase in the use of technological goods combined with a more moderate improvement in housing quality. In Kinshasa, one could also observe a more economical use of the food budget, which in the end did not much improve the nutritional status of their inhabitants. For this reason, one can assume social norms attached to asset ownership to be much more demanding in the capital compared to other cities in our sample. Why else would one prioritize a further accumulation of assets at the expense of an improvement in nutritional status? Even if nutritional status were socially important too, the fact that asset ownership is generally more visible than food consumption, may also contribute to this sort of unbalanced growth.

<<< Fig. 4 >>>

Compared to the former, an inverse trajectory seems to apply to Kananga: despite a sharp increase in mean budget levels, the inhabitants of this city barely saw their asset stock grow. As a result of this evolution, the poverty headcount for this city has considerably improved, notwithstanding the higher inequality observed¹⁵. However, this poverty reduction seems far from structural given the poor strengthening of people's asset base. In this respect, it is important to point to another methodological concern. Given Kananga's isolation in the belly of the country, reflected by assumed higher prices for imported consumer goods, it is very possible that many inhabitants had no other option than to spend a disproportionate share of their income on basic necessities like

¹⁴ When analyzing this figure, abstraction will be made from the significance tests performed on each city's budget distribution.

¹⁵ Again, these changes based on budget data have not proven to be significant at a 0.05 level.

food. As a result of this distortion between food and non food outlays, the poverty line (and corresponding deflator) will underestimate, and corrected budget levels will overestimate true welfare levels. With an observed increase in food share from 62% to 69%, this methodological bias may well be at play in Kananga. In other words, if the citizens of Kananga had a similar access to different forms of assets as their counterparts in Kinshasa, Kananga probably would have followed a comparable trajectory as the country's capital. Again, by considering both dimensions at the same time, we are at least able to label Kananga's growth as generally unbalanced.

Mbandaka, on the other hand, seems to be frozen in time between 1975 and 2005: whether in terms of welfare or wealth, little has changed for the inhabitants in this city. However, behind this stationary appearance, we were able to identify some depletion in non-technological consumer goods as well as a more efficient use of the food budget, which probably greatly helped people to smooth their consumption level and prevented their nutritional status from declining. As a result of this successful coping strategy, both the city's poverty headcount and income inequality largely remained the same.

For Bukavu, living standards decreased dramatically between 1975 and 2005. This was not only tangible through a generalized depletion of housing quality and non-technological durables, but certainly also with respect to consumption. Consequently, people's mean nutritional status deteriorated significantly. In addition, since inequality has increased very much over time, the city's poverty incidence further exacerbated. Evidently, the conflict which ravaged this part of the country provides a first logical explanation. However, other areas in the same region which were equally or even more affected by the conflict (like North Kivu, Maniema and the Ituri district) did not seem to share the same precarious conditions as Bukavu (or South Kivu) (Marivoet 2009:261-262).

And finally, in the absence of a budget report for Kisangani, classifying this city among one of the typologies above is simply impossible. However, based on the available information, Kisangani might have followed a trajectory similar to that of Mbandaka or Bukavu.

By way of concluding this section, we would like to examine the relative position of each city along both dimensions. Firstly, neither Kinshasa nor Matadi seems to be among the richest cities of our sample, although

the port city made considerable progress over the period considered. Indeed, both in 1975 and 2005, the highest welfare level was reached by Mbandaka and Kananga, where the latter leapfrogged the former over the 30-year time interval. On the other hand, whereas the inhabitants in the latter two cities have always been quite vulnerable to shocks given their poor asset stock, the reverse seemed to be the case for Kinshasa and Matadi, where asset levels were always well above those observed in other cities. Next, one could also observe that the inhabitants of Bandundu in 2005 more or less shared the same living standard as their 1975 counterparts in Kinshasa and Matadi; and that the same counts for the citizens of Kikwit in 2005 vis-à-vis Bandundu in 1975. And finally, the regress of Bukavu as discussed above seems even more dramatic on a relative scale: whereas the city's welfare level in 1975 was still among the highest of our sample (together with Mbandaka) and with an asset stock adjacent to that of Kinshasa and Matadi, the general living standard of Bukavu clearly fell to the least enviable position in 2005.

4. Conclusions

By means of two sets of household and expenditure surveys, this study has analyzed the evolution in living standard between 1975 and 2005 in eight cities of the DRC. This period largely coincides with the formal crisis the country went through after the introduction of the catastrophic Zairianisation policies of 1973. Although each city has experienced its own particular history, the following phenomena seem to characterize the whole urban sector of the country over the period considered.

To begin with and most remarkably, the long and profound crisis did not seem to have much corroded the urban living conditions; quite the contrary, some cities have even made considerable progress over the 30-year time period. As such, what has been labelled the *miracle of Kinshasa* also seems to apply to many other urban centres. In general, people's resilience to crisis appears not to be accompanied by a depletion of household assets, but was rather made possible by a massive reliance on informal income activities, combined with a more efficient use of the household food budget.

Linked to the latter observation, one could notice a second general tendency. Over the years, the daily food bowl of many urban Congolese citizens has substantially altered: whereas in 1975 the lion share of calories were still

obtained through the consumption of starchy staples (mainly cassava), their share sharply decreased in 2005 in favour of calories coming from cereals and, to a lesser extent, from (palm) oil.

Thirdly, one could also observe a general increase in the budget share spent on education. At this point, the formal crisis was indeed very tangible as households needed to compensate for the state's retreat in financing this sector.

And finally, economic geography was an important determinant for people's access to (technological) consumer assets. Simply stated, the change in physical accessibility of a city in general and its relative proximity to an international sea port more in particular seem to have structured the evolution in asset ownership quite well. Linked to this, a substantial increase in the use of bicycles in the most isolated cities of the country was another common observation.

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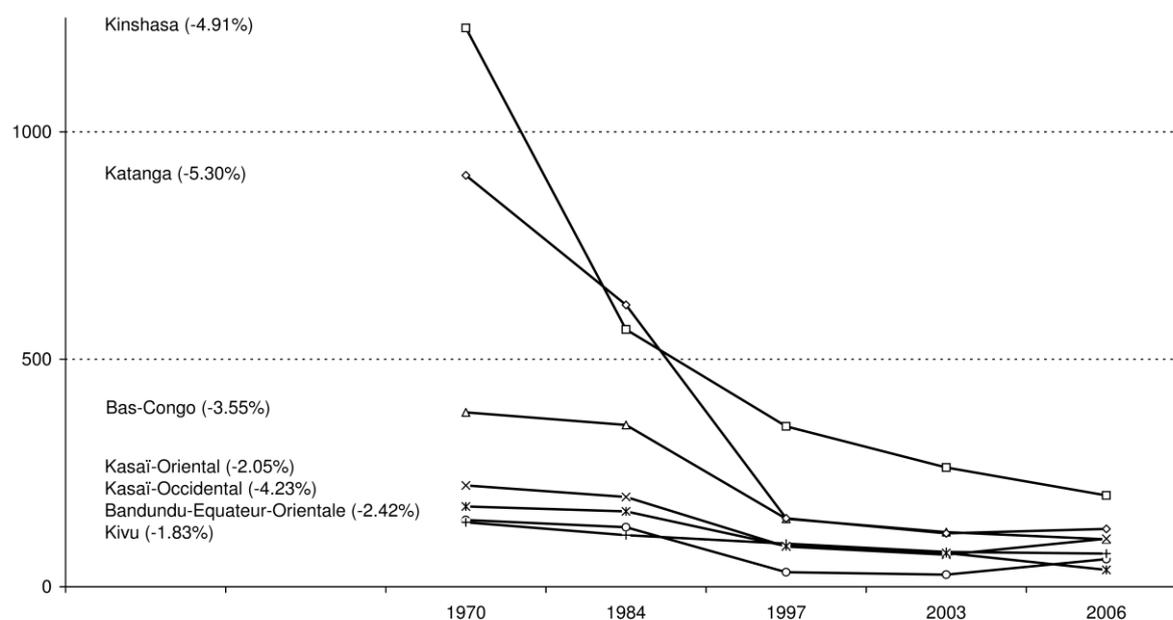
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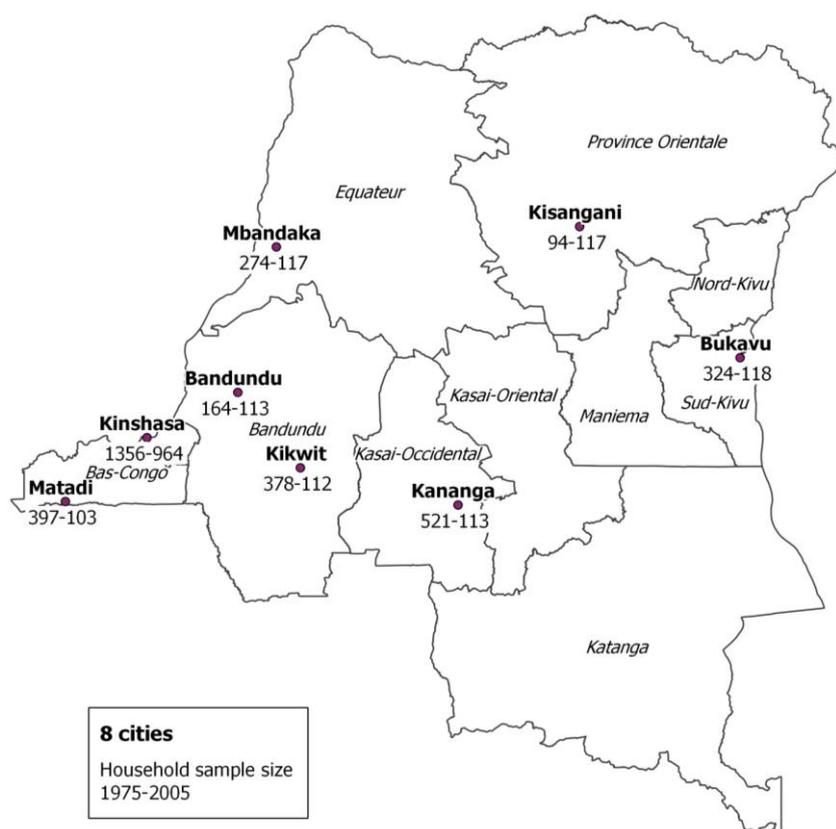
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Fig. 1 Provincial estimates of GDP per capita (\$ constant 2000)



Note: Given their highly similar evolution, the series of Bandundu, Équateur and Orientale have been merged together. The percentages between brackets represent the average annual growth rates for the period 1970-2006. Source: Based on the World Development Indicators (2012), de Saint Moulin (1987), République démocratique du Congo (2008) and data from the ongoing revision of national accounts (see World Bank's country page at <http://web.worldbank.org>).

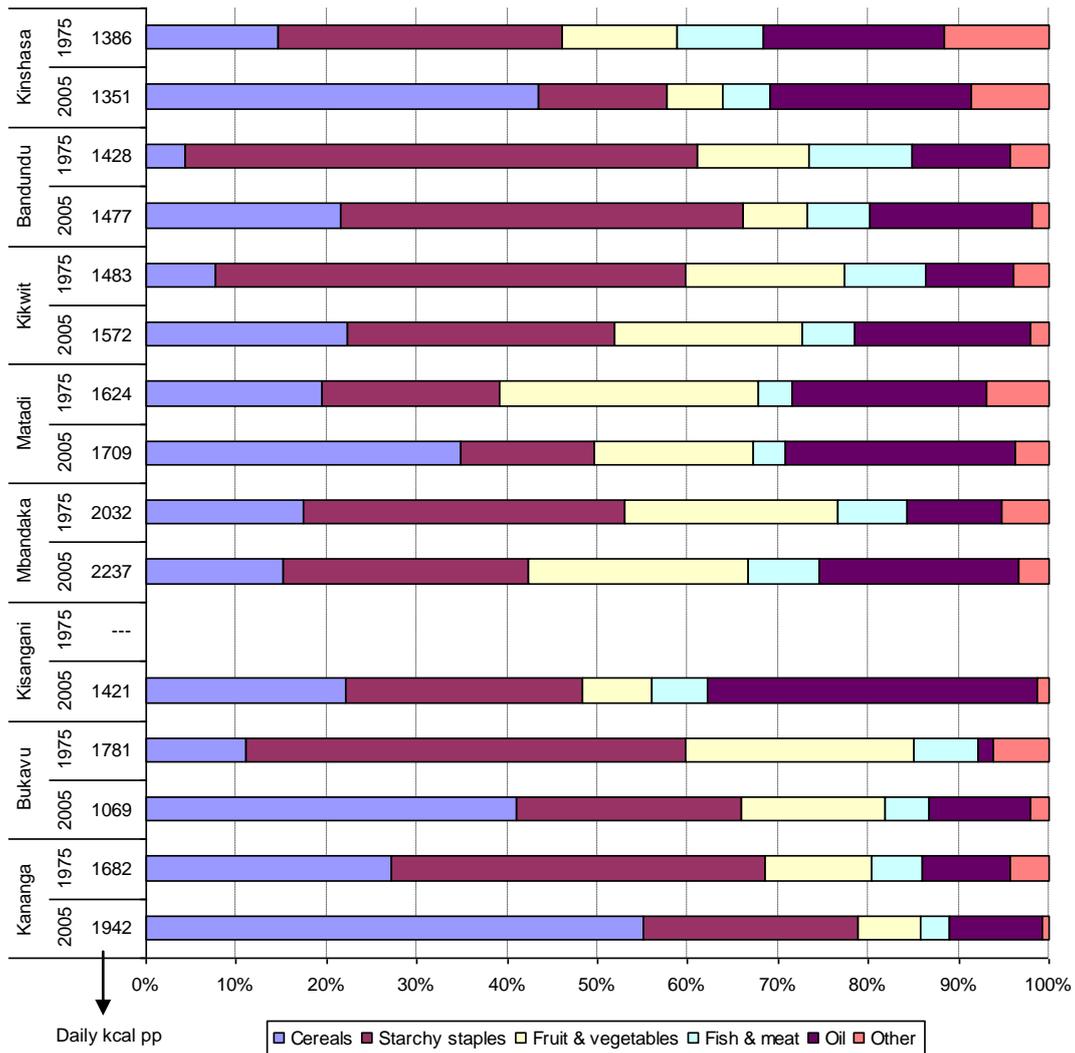
Fig. 2 Number of households surveyed in each of the eight cities (1975-2005)



Note: Although the exact survey period may vary between cities, for convenience we will refer to '1975' to indicate the period 1975-6 and to '2005' for the period 2004-5, unless otherwise stated.

Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5). The map itself has been created using Quantum GIS and geographic data coming from Africover.

Fig. 3 Food basket composition per city and time period

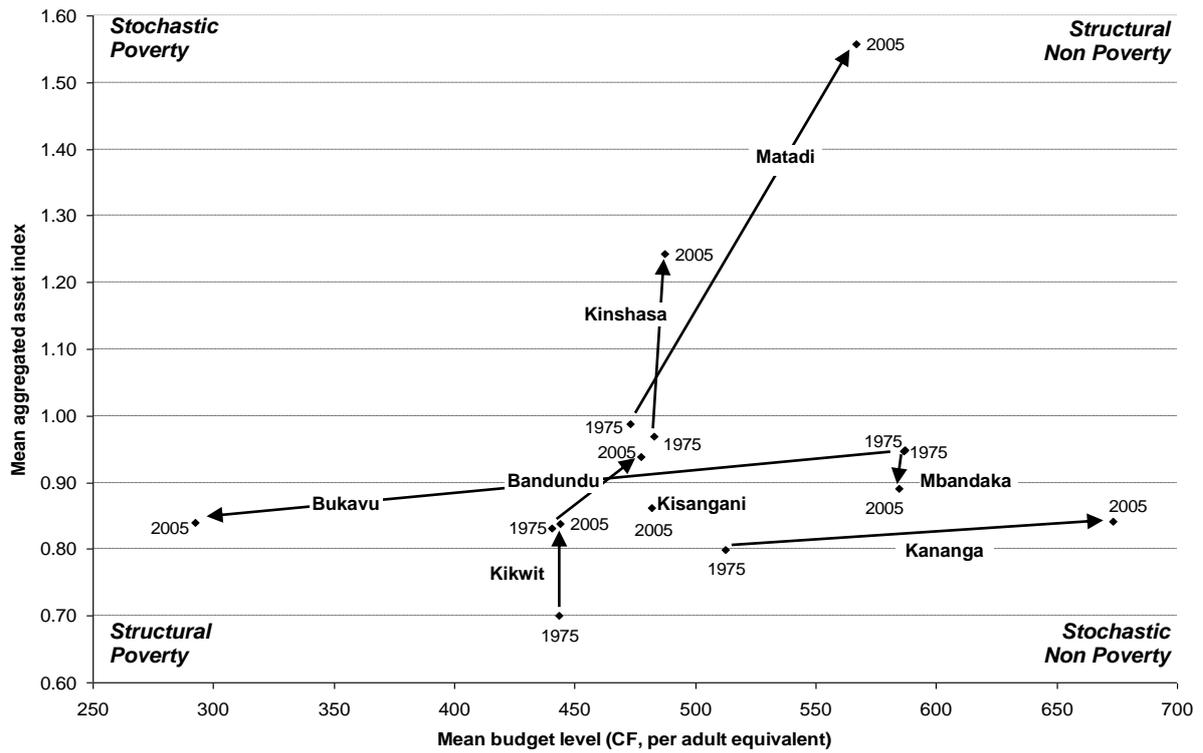


Note: The food basket composition displayed in this figure represents the relative shares of each food category in the total amount of calories consumed per city and time period.

With respect to mean daily calorie intake, the following changes are significant: Bukavu (at 0.001 level) and Kananga (at 0.05 level). With respect to shares of food categories, all changes are significant at 0.001 level, except for fruit/vegetables in Kikwit and oils in Matadi which are significant at 0.01 level, and except for cereals, fruit/vegetables and fish/meat in Mbandaka, fish/meat in Matadi and oils in Kananga, which are not significant at 0.05 level.

Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5).

Fig. 4 Evolution in mean budget and aggregated asset index per city (1975-2005)



Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5).

Table 1 Poverty lines and corresponding deflators per city and year

	1975-6		2004-5	
	<i>Poverty line (K)</i>	<i>Deflator</i>	<i>Poverty line (CF)</i>	<i>Deflator</i>
Kinshasa	64.78	0.12	538.11	1.00
Bandundu	84.71	0.16	233.30	0.43
Kikwit	53.13	0.10	275.08	0.51
Matadi	43.04	0.08	438.24	0.81
Mbandaka	88.22	0.16	372.75	0.69
Kisangani	---	---	262.48	0.49
Bukavu	69.67	0.13	557.23	1.04
Kananga	63.27	0.12	298.56	0.55

Note: For the city of Kisangani, the price report for 1975-6 could not be retrieved.

Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5).

Table 2 Asset types and index components

Asset type	Index components
Housing quality	Roof material Wall material Lighting source Water source Toilet type Occupation status
Technological durables	Television Radio (cassette) Telephone (mobile) Cooking unit Refrigerator/freezer Car/van Motorcycle
Non-technological durables	Table Couch Wardrobe Chairs/per person Beds/per person Mattress/per person Bicycle
Human capital	Schooling (of household head) Consumption of calories Consumption of proteins

Source: Adapted from Moser and Felton (2007).

Table 3 Distribution characteristics per city and time period

	Poverty headcount (z=558CF)			Mean budget (CF)			Gini coefficient		
	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05
Kinshasa	0.74 (0.013)	0.73 (0.017)	-0.02 (0.487)	482.78 (12.216)	487.36 (16.110)	4.58 (0.821)	0.40 (0.010)	0.38 (0.013)	-0.02 (0.312)
Bandundu	0.82 (0.031)	0.74 (0.046)	-0.07 (0.174)	440.26 (23.413)	477.34 (20.293)	37.09 (0.231)	0.34 (0.022)	0.24 (0.016)	-0.10 (0.000)
Kikwit	0.78 (0.023)	0.73 (0.042)	-0.05 (0.290)	443.55 (15.862)	444.13 (22.494)	0.58 (0.983)	0.33 (0.014)	0.28 (0.018)	-0.05 (0.038)
Matadi	0.75 (0.023)	0.66 (0.062)	-0.08 (0.201)	473.09 (18.581)	566.68 (47.893)	93.59 (0.069)	0.36 (0.015)	0.38 (0.032)	0.02 (0.500)
Mbandaka	0.61 (0.034)	0.61 (0.050)	0.00 (0.996)	587.17 (26.264)	584.50 (36.068)	-2.67 (0.952)	0.34 (0.018)	0.35 (0.020)	0.01 (0.642)
Kisangani	---	0.73 (0.044)	---	---	482.05 (33.486)	---	---	0.35 (0.027)	---
Bukavu	0.62 (0.030)	0.86 (0.034)	0.24 (0.000)	586.31 (25.673)	292.52 (25.377)	-293.79 (0.000)	0.36 (0.015)	0.43 (0.025)	0.07 (0.014)
Kananga	0.71 (0.022)	0.63 (0.052)	-0.07 (0.186)	512.44 (15.409)	673.32 (104.367)	160.88 (0.127)	0.33 (0.013)	0.39 (0.076)	0.06 (0.420)

Note: The poverty line of 558 CF is slightly different from the reference line (Kinshasa) shown in Table 1, which is not an error as both thresholds serve a different purpose. More precisely, for the reference line, a more austere non-food allowance has been used to control for potential inconsistencies generated by relative price differences between food and non food goods (see Chapter 3 for more info). Standard errors for estimates and p-values for differences (two-tailed) are given in brackets.

Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5).

Table 4 Budget composition per city and time period

	Food (%)			Housing (%)			Clothing (%)			Transport (%)			Education (%)		
	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05
Kinshasa	64.7 (0.004)	61.7 (0.006)	-3.0 (0.000)	11.2 (0.002)	13.4 (0.003)	2.2 (0.000)	6.4 (0.003)	4.0 (0.002)	-2.3 (0.000)	6.0 (0.002)	5.6 (0.003)	-0.3 (0.275)	0.7 (0.001)	4.3 (0.002)	3.6 (0.000)
Bandundu	58.1 (0.010)	63.7 (0.012)	5.6 (0.000)	6.6 (0.004)	11.1 (0.006)	4.6 (0.000)	6.0 (0.008)	4.7 (0.004)	-1.3 (0.143)	2.5 (0.005)	0.7 (0.003)	-1.8 (0.002)	0.6 (0.001)	4.9 (0.005)	4.3 (0.000)
Kikwit	58.4 (0.007)	60.6 (0.011)	2.3 (0.085)	6.9 (0.003)	10.2 (0.006)	3.4 (0.000)	6.8 (0.005)	3.3 (0.003)	-3.5 (0.000)	1.9 (0.003)	1.5 (0.004)	-0.4 (0.423)	2.0 (0.003)	3.8 (0.005)	1.8 (0.004)
Matadi	69.9 (0.699)	66.1 (0.661)	-3.9 (0.046)	10.6 (0.004)	11.7 (0.013)	1.0 (0.440)	3.9 (0.005)	4.2 (0.005)	0.3 (0.638)	2.8 (0.003)	3.1 (0.005)	0.2 (0.703)	0.3 (0.000)	2.7 (0.004)	2.4 (0.000)
Mbandaka	74.3 (0.008)	65.9 (0.010)	-8.4 (0.000)	8.1 (0.003)	9.4 (0.005)	1.3 (0.031)	4.2 (0.005)	4.6 (0.004)	0.4 (0.527)	1.6 (0.002)	3.8 (0.005)	2.2 (0.000)	0.3 (0.001)	2.1 (0.003)	1.8 (0.000)
Kisangani	68.1 (0.013)	69.3 (0.013)	1.2 (0.512)	6.6 (0.004)	9.5 (0.006)	2.9 (0.000)	7.1 (0.010)	4.0 (0.005)	-3.0 (0.008)	7.0 (0.007)	3.9 (0.007)	-3.0 (0.002)	0.1 (0.000)	3.3 (0.004)	3.2 (0.000)
Bukavu	69.8 (0.007)	64.2 (0.019)	-5.7 (0.006)	7.7 (0.003)	15.4 (0.014)	7.7 (0.000)	4.2 (0.005)	4.1 (0.004)	-0.2 (0.780)	3.4 (0.004)	1.4 (0.003)	-2.0 (0.000)	0.5 (0.001)	6.1 (0.007)	5.7 (0.000)
Kananga	62.0 (0.006)	68.8 (0.016)	6.8 (0.000)	9.8 (0.004)	10.8 (0.006)	1.0 (0.143)	6.6 (0.004)	4.7 (0.004)	-1.9 (0.001)	3.2 (0.002)	2.2 (0.009)	-1.0 (0.278)	1.0 (0.001)	2.6 (0.005)	1.6 (0.001)

Note: Standard errors for estimates and p-values for differences (two-tailed) are given in brackets.

Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5).

Table 5 Mean standardized asset indices per city and time period

	Housing quality			Technological durables			Non-technologic. durables			Human Capital			Aggregated index		
	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05	1975	2005	diff. 75-05
Kinshasa	1.00 (0.007)	1.25 (0.009)	0.25 (0.000)	0.89 (0.035)	1.85 (0.059)	0.96 (0.000)	1.04 (0.017)	0.93 (0.020)	-0.11 (0.000)	0.96 (0.024)	0.95 (0.025)	0.00 (0.902)	0.97 (0.015)	1.24 (0.022)	0.27 (0.000)
Bandundu	0.79 (0.018)	0.95 (0.023)	0.16 (0.000)	0.44 (0.048)	0.75 (0.103)	0.32 (0.006)	1.14 (0.062)	1.02 (0.045)	-0.11 (0.136)	0.96 (0.051)	1.05 (0.056)	0.09 (0.245)	0.83 (0.031)	0.94 (0.042)	0.11 (0.042)
Kikwit	0.70 (0.010)	0.69 (0.017)	-0.01 (0.491)	0.36 (0.032)	0.49 (0.048)	0.13 (0.019)	0.93 (0.024)	1.08 (0.058)	0.15 (0.017)	0.81 (0.027)	1.14 (0.060)	0.32 (0.000)	0.70 (0.016)	0.84 (0.032)	0.14 (0.000)
Matadi	1.00 (0.010)	1.26 (0.022)	0.26 (0.000)	0.73 (0.044)	2.32 (0.169)	1.59 (0.000)	1.25 (0.040)	1.11 (0.070)	-0.13 (0.098)	0.97 (0.036)	1.57 (0.233)	0.60 (0.011)	0.99 (0.021)	1.56 (0.086)	0.57 (0.000)
Mbandaka	0.76 (0.016)	0.75 (0.022)	-0.01 (0.640)	0.61 (0.061)	0.50 (0.065)	-0.12 (0.194)	1.14 (0.052)	0.85 (0.096)	-0.29 (0.008)	1.22 (0.059)	1.51 (0.115)	0.29 (0.023)	0.95 (0.036)	0.89 (0.054)	-0.06 (0.379)
Kisangani	1.02 (0.026)	0.79 (0.043)	-0.22 (0.000)	1.05 (0.147)	0.91 (0.093)	-0.13 (0.440)	1.07 (0.059)	0.80 (0.047)	-0.26 (0.001)	---	0.97 (0.050)	---	---	0.86 (0.041)	---
Bukavu	0.95 (0.020)	0.80 (0.026)	-0.14 (0.000)	0.64 (0.051)	0.78 (0.077)	0.13 (0.150)	1.05 (0.036)	0.85 (0.065)	-0.20 (0.008)	1.17 (0.043)	0.96 (0.112)	-0.21 (0.084)	0.95 (0.027)	0.84 (0.053)	-0.11 (0.072)
Kananga	0.88 (0.010)	0.87 (0.022)	-0.01 (0.797)	0.44 (0.034)	0.59 (0.062)	0.15 (0.030)	0.87 (0.025)	0.61 (0.048)	-0.26 (0.000)	1.00 (0.032)	1.36 (0.077)	0.36 (0.000)	0.80 (0.019)	0.84 (0.033)	0.04 (0.259)

Note: Standard errors for estimates and p-values for differences (two-tailed) are given in brackets.

Source: Based on the demographic and budget surveys (1975-6) and the 1-2-3 Survey (2004-5).