Shifting Fortunes and Enduring Poverty in Madagascar: Recent Findings

EXECUTIVE SUMMARY
Photos

The series of papers comprising the report “Shifting Fortunes and Enduring Poverty in Madagascar” is summarized here, and was produced under the World Bank’s Poverty Global Practice, Africa Region. Theresa Osborne and Nadia Belghith led this work under the supervision of Pablo Fajnzylber, Practice Manager. The support and guidance of Mark Lundell, Country Director, and Coralie Gevers, Country Manager, are gratefully acknowledged. The report also benefited from consultations with various Ministries of the Government of Madagascar as well as private, donor, and non-governmental stakeholders. The data utilized were collected by the national statistical institute (INSTAT), with support from the United Nations, the African Development Bank, and the World Bank.

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This report summarizes the main findings of the following chapters and highlights some of the most important determinants of the dynamics – as well as the persistence – of poverty in Madagascar over recent years.


Acronyms

**ENEMPSI**  Enquête nationale sur l’emploi et le secteur informel  
(National employment and informal sector survey)

**ENSOMD**  Enquête nationale sur les objectifs millénaire du développement  
(National Survey on the Millennium Development Goals)

**EPM**  Enquête périodique auprès des ménages (Periodic Household Survey)

**GDP**  Gross Domestic Product

**NFE**  Non-farm enterprise

**NPK**  Nitrogen phosphorus and potassium (fertilizer)

**OOME**  Owner-operated microenterprise
Shifting Fortunes and Enduring Poverty in Madagascar: Recent Findings
Madagascar made very little progress in improving the welfare of the poor in recent years, as gains achieved after 2001 were reversed between 2005 and 2012.

Since 2001, Madagascar has seen two political crises in addition to disruptions in access to markets for textiles and manufacturing exports, severe climatic shocks, and global food price spikes. Real per capita GDP declined between 2001 and 2012, and despite post-crisis stabilization, has increased only one percent in the ensuing four years.

Against this backdrop, the headcount poverty rate declined slightly over the 2001-2012 period, but it remains exceedingly high at 70.7 percent (2012) (figure 1). Given Madagascar’s persistently high poverty rates, perhaps a more meaningful indicator of welfare is the poverty gap index, which measures the severity of poverty. Based on this measure, the average poor Malagasy consumed 32.2 percent less than a person living at the poverty line in 2012. This gap has stayed relatively flat, falling from 35.9 in 2001 and then increasing just slightly over the period 2005-2012 from 31.3 (BR&O)
Inequality fell between 2001 and 2005 then rose again by 2012, but remains modest relative to other African countries.

The Gini coefficient, a measure used to monitor inequality, has fallen since 2001 from 46.9 to 41, and is now below the Sub-Saharan African average of 43.8 (figure 1). Moreover, Madagascar’s level of inequality is generally not characterized by extremes of wealth: The ratio of consumption for the top decile to that of the bottom decile (P90/P10) ranged from 5 to 8 over the 12 year period – a low level relative to the 13.4 average for low income countries (BR&O).

FIGURE 1: Poverty Gap Index, Headcount Poverty Rate, and Gini Coefficient 2001-2012

Note: Calculations use the national poverty line estimated using 2010 EPM data.

1 The Gini coefficient measures the degree of dispersion from perfect equality, and ranges from 0 (no inequality) to 100 (maximum inequality.)
Climatic shocks have been a major determinant of welfare fluctuations, intensifying poverty and inequality in some years, such as 2010, when real incomes fell for the poorest households.

A high percentage of Malagasy households typically reports being adversely affected by drought, cyclone, and late rains, especially among the poorest households (figure 2). In fact, between 2005 and 2010, the increased severity of weather shocks was the most important cause of declines in well-being for those falling in the bottom of the consumption distribution (figure 3).

Mechanisms to help households insure against climatic shocks would reduce transient inequality, while also helping the poor avoid coping strategies that deplete their assets and compromise their investments in health and education (TO&B).

FIGURE 2: Percentage of Households Having Stated Shock (top three reported shocks), by Consumption Quintile, 2012

FIGURE 3: The Effects of Climatic Shocks on the Change in Consumption of Rural Households by Quintile, 2005-2010

Source: ENSOMD 2012  
Source: EPM 2005, EPM 2010
Although between 2005 and 2010 the poor accumulated more “endowments” – productive assets and favorable household and community characteristics – and experienced fewer adverse shocks. However, the benefits derived from these factors was lower in 2010 than in 2005. At the same time, incomes associated with the economic activities of the poor declined.

For the poorest households, consumption declined an average of 3.1 percent between 2005 and 2010, as the relationship between their consumption and their “endowments” – in particular, greater education, possession of a means of transport, higher community level electrification, and fewer adverse health, security, and climatic shocks – fell by 6.9 percent (figure 4). For rural households, the association between the amount of land cultivated and consumption fell by approximately 6 percent for all quintiles of the consumption distribution except the top one (TO&B).
For rural households, a decline in profits from agriculture, combined with more damaging climatic events, explain the reduction in welfare for the bottom two quintiles between 2005 and 2010 (figure 5).

Health shocks compounded these effects, at least partially offsetting them was the availability of profitable off farm sources of income for male-headed households (TO&B).

Two key factors help explain the decline in agricultural profits:

**FIGURE 5: Main Negative Determinants of Change in Consumption, Rural Households, 2005-2010 (Significant Factors Only)**

Source: EPM 2005, EPM 2010
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First, between 2005 and 2010 the poor became more isolated from markets and services as transport conditions worsened.

The average real price to transport goods such as a bag of rice rose 42 percent. Fuel costs rose along with food prices (with oil prices rising approximately 48 percent).

The average time to reach markets also increased, particularly for the bottom quintile – from 1.9 to 2.4 hours (figure 6). The time to reach a main urban center doubled to almost 12 hours as distances to markets, schools, and health centers became more strongly related to poverty. The lack of funding for road maintenance following the 2009 political crisis is an important partial explanation for the changes in travel time seen, but this also followed years of under-investment.

*Road and transport infrastructure is crucial for poverty reduction in Madagascar.* Implementation of a sector strategy informed by an analysis of the returns to various investments is of utmost importance, given the country’s acute transport infrastructure deficits coupled with stringent public financing constraints.

**FIGURE 6: Average Time to Food Market by Quintile (Hours)**

<table>
<thead>
<tr>
<th>Quintile</th>
<th>2005</th>
<th>2010</th>
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<tr>
<td>Richest</td>
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<td>Second</td>
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<tr>
<td>Poorest</td>
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Source: EPM 2005, EPM 2010
The second key factor reducing agricultural incomes was a set of policies designed to insulate the country from rising world rice prices, which diminished the producer price disproportionately post-2005 and intensified rural poverty.

In the face of sharply rising world prices for rice – Madagascar’s dominant crop and staple food – beginning in 2007 the Government progressively implemented measures that kept the price of rice relatively stable for urban-based consumers. However, producers, who were increasingly cut off from demand centers, were unable to benefit from rising world prices. The average producer price fell 9 percent (figure 7) while input prices rose, and the ratio of fertilizer (NPK) prices to paddy prices jumped from 2.2 to 5.7 between the two years for the poorest producers (figure 8).

Interventions in rice and other food markets can have unanticipated effects which depend upon the performance of input markets and transport linkages.

_Food market policies need to balance carefully the positive effect of high producer prices on the welfare of the poor producer._

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**FIGURE 7:** Average nominal price (mean) of 1 kg paddy, by consumption quintile (Ariary)

![Figure 7: Average nominal price of 1 kg paddy, by consumption quintile (Ariary)](source: EPM 2005, 2010)

**FIGURE 8:** Median Ratio Price of Fertilizer to Price Received for Rice Paddy, by Consumption Quintile

![Figure 8: Median Ratio Price of Fertilizer to Price Received for Rice Paddy, by Consumption Quintile](source: EPM 2005, EPM 2010)
In response to adverse shocks and changing economic circumstances, households shifted their efforts between farm and off-farm activities, but doing so in 2010 was only partially successful in shoring up household consumption.

Just as people had moved into agriculture in 2005 when employment in urban based sectors fell, they transferred to non-farm enterprises, particularly secondary employment in services, as returns in agriculture tumbled in 2010 (figure 9).

However, such strategies could not fully offset the weak demand for labor. While secondary employment increased, so did the number of those seeking but unable to find secondary work. Wages increased just slightly in 2010, but only for male workers, and then returned to their former (2005) levels by 2012.

**FIGURE 9: Sector of Secondary Employment of Household Head (%)**

Of all household and community-level factors, those that are the most predictive of higher welfare are higher community-level electrification, proximity to urban areas, and greater employment by the household off-farm (M&O).

In urban areas, having an education is also predictive of higher welfare; and in rural zones, greater land areas and higher paddy prices are important predictors. In particular, in order of importance, the best predictors (among the many measured characteristics and events) of higher consumption nationally are:

1. Living in a community with high levels of electrification (with more than 27 percent of households having electricity);
2. Having a university-educated household head.
3. Having a literate head of household.
4. Proximity to the nearest major urban center.
5. Higher prices for paddy rice; and
6. Higher livestock holdings.

For agricultural households only, the best predictors in order of importance are:

1. Greater cultivated land;
2. Proximity to the nearest major urban center;
3. Living in a community with higher levels of electrification;
4. A lower percentage of household revenues from agriculture; and
5. A higher price of paddy rice.

These predictors can be used for targeting of programs to the poorest of the poor or for guiding causal analysis of the drivers of poverty.
In areas with business opportunities, access to electricity can have a significant positive effect on incomes.

The evidence is not direct, but it is suggestive: First, microenterprises that utilize electricity are more profitable, taking into account other firm characteristics (B&O, J). In addition, while the percentage of households with electricity increased only slightly from 15 percent to 17 percent between 2005 and 2010, the correlation between electrification and consumption increased as non-farm enterprise (NFE) income became more important (TO&B). Communities with higher levels of electrification may also be more affluent and able to support more productive NFE’s. Nonetheless, there is no evidence available that access to electricity can raise incomes in the remotest and poorest areas.

More data and analysis – including rigorous impact evaluation – are needed on the potential benefits of more widespread electrification.
The structure of the country’s non-agricultural sectors – in particular, the predominance of tiny owner-operated firms – involves major economic losses: these enterprises are too small to be efficient, employing too little capital and labor.

Although profitability would increase with greater capital investment, overwhelmingly firms remain at a scale of operation associated with low profitability (see figure 10). Moreover, almost 70 percent of owner-operated micro-enterprises (OOMEs) employ only the owner, even though the average return to capital in such an enterprise (at 12 percent per annum) is only one-third that of enterprises employing at least one additional individual (B&O).

The continuing predominance of tiny, inefficient firms may be due to the risks and difficulties associated with providing credit or making sizeable enough equity investments to achieve economies of scale. If so, this would be more difficult in a context where entrepreneurs are poor (B&O). While microenterprise loans may help to provide employment for the poor, if the amounts available are too small, they would have little impact on overall productivity, employment, and wage growth (B&O).

A restructuring of the Malagasy economy into larger enterprises is needed to raise productivity and incomes.

FIGURE 10: Effect on Profits of Greater Capital Invested in OOME’s, by Percentile of Capital Invested.

Source: Bi and Osborne 2016 using ENEMPSI
Notes: Shown are elasticities of profits with respect to capital invested, with all positive values indicating foregone profits. “Single-worker” enterprises are those employing only the owner, and “multi-worker” are those employing at least one additional family or paid worker part time.
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The current structure of firms depresses labor income as well.

For the 70 percent of microenterprises that employ only their owners, the income generated by the entrepreneur’s own time is only 60 percent of the average wage in the economy, even when one takes into account individual differences in skill and ability. Owners of multi-worker microenterprises, however, earn a 68 percent wage premium (B&O).

Micro-enterprises are also unable to generate sufficient employment opportunities. At present, multi-worker firms employ on average .47 paid workers and 81 paid hours per month, much less than the 760 hours or 4.4 full-time workers needed to maximize profit levels.
Labor market frictions depress employment levels and wages offered by both agricultural and off-farm enterprises (J, B&O).

The gap between actual and optimal labor employment suggests an important barrier to hiring workers, even informally. This may be due to the costs of identifying good workers, as well as monitoring and incentivizing workers once hired.

*Investigation into the underlying issues, possibly through pilot programs to reduce these barriers, could point to cost-effective measures for stimulating job creation and wage and productivity growth.*
Women in Madagascar earn lower wages than men; they also face greater difficulties in coping with shocks and finding productive employment.

In 2010, women had more difficulty than men in securing employment off farm when agricultural conditions worsened, thus experiencing higher rates of under-employment (BR&O). Although female-headed households are not consistently worse off, when taking into account educational attainment, age, and location (region and urban versus rural milieu), men earned 37 percent more than women in the labor market in 2012 (B&O). Female entrepreneurs are also less likely to own and operate a micro-enterprise that employs other workers, and more likely to be self-employed in a smaller microenterprise than men, with the consequence that they earn lower profits and labor income. Moreover, even accounting for size, male-operated firms earn higher profits, all else equal (B&O). This disparity in access to opportunities widened substantially in 2010: Male-headed households were able to offset much of the losses from climatic shocks and declining returns to agriculture through off farm work in that year (TO&B).
The poverty of the Malagasy economy, in combination with high transport costs and frictions in capital and labor markets, may create a low productivity trap.

Poverty itself results in low demand for non-agricultural goods and services and may, in combination with capital and labor market frictions, result in a low-income low-productivity trap. Microenterprise owners rate the lack of demand for their goods and services as the most important constraint. Moreover, firms that serve larger customers that are involved in exports are more profitable, even after accounting for scale and characteristics of the entrepreneur (B&O).

*This suggests that demand-side stimulus, if sustainable and accompanied by productive investments, could be part of a broader strategy to reduce poverty.*