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Deutsches Institut für Entwicklungspolitik

German Development Institute

Discussion Paper 11/2012

Short-term Effects of the Global Economic and Financial Crisis on Households in three Developing Countries

The Cases of El Salvator, Tajikistan and Cambodia

Esther Gehrke

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Bonn 2012

Discussion Paper / Deutsches Institut für Entwicklungspolitik
ISSN 1860-0441

The Deutsche Nationalbibliothek lists this publication in the
Deutsche Nationalbibliografie; detailed bibliographic data
is available in the Internet at http://dnb.d-nb.de.

ISBN 978-3-88985-554-1

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Acknowledgements

I would like to thank Markus Loewe for his continuous guidance and advice. I am also grateful to Tilman Altenburg and Peter Wolff for their invaluable comments and suggestions. Any remaining errors are my own. Funding from the Federal Ministry for Economic Cooperation and Development (BMZ) is gratefully acknowledged. I am grateful to the World Bank, the Dirección General de Estadística y Censos (El Salvador) and the Cambodia Institute of Statistics for permission to use their data.

Abbreviations

ADB	Asian Development Bank
CSES	Cambodia Socio-Economic Survey
CIS	Commonwealth of Independent States
DAC	Development Assistance Committee
EAP	East Asia and Pacific
ECA	Europe and Central Asia
EHPM	Encuesta de Hogares de Propósitos Múltiples
FDI	Foreign direct investment
GDP	Gross domestic product
GNI	Gross national income
IDS	Institute of Development Studies, University of Sussex
ILO	International Labour Organization
IMF	International Monetary Fund
LAC	Latin America and Caribbean'
LCU	Local currency units
LIC	Low income country
LMIC	Lower middle income country
LSMS	Living Standards Measurement Survey
MENA	Middle East and North Africa
NA	North America
ODA	Official Development Assistance
OLS	Ordinary Least Squares
PATI	Programa de Apoyo Temporal al Ingreso
PPP	Purchasing power parities
SSA	sub-Saharan Africa
UNDP	United Nations Development Programme
WFP	World Food Programme

Contents

Figures

Tables

Executive summary

The global economic and financial crisis erupted in late 2008 while many developing countries were still suffering from the effects of the fuel and food price crisis of 2007, raising fears that the latest crisis would exacerbate the effects of the fuel and food crisis, and lead to significant increases in poverty and higher rates of unemployment worldwide. Soon after the financial crisis hit, a lot was published about the degree to which it was affecting developing countries and their populations.

Three years after the peak of the global economic and financial crisis, our understanding of its microeconomic effects in developing countries remains limited. Literature on its macroeconomic effects generally concludes that developing countries were able to overcome the economic shock fairly quickly and that there are only a few signs of serious lasting effects. But some authors, who have assessed the micro-level effects of the crisis on vulnerable groups in developing countries, discovered considerable losses of income and warn of second-round effects in developing countries with lasting consequences for general wellbeing. Both the existing micro- and the macroeconomic approaches have drawbacks that seriously limit our understanding of the microeconomic effects of the global crisis in developing countries.

This paper presents new evidence regarding the short-term microeconomic effects of the global economic and financial crisis in selected developing countries. It is divided into two main parts. The first part re-examines evidence about the channels of transmission of the global crisis and its immediate macroeconomic effects on developing countries. It also provides quantitative evidence about the relevance of each channel in transmitting the crisis worldwide and in particular, to developing countries. The second part of the paper analyses short-term effects of the crisis on households in three developing countries: El Salvador, Tajikistan and Cambodia. It provides evidence that is nationally representative showing which population groups were most affected by the crisis and the comparative effectiveness of national response strategies in protecting households from its adverse consequences. The paper concludes with suggestions about designing social protection schemes that could cushion the micro-level effects of economic crises in developing countries.

The economic and financial crisis affected countries (other than the United States) through four transmission channels: the wealth channel, the investment channel, the trade channel and the transfer channel. At the macroeconomic level, the trade and investment channels were most responsible for severe output losses. The crisis was transmitted in sequences: to begin with, the subprime crisis led to the worldwide depreciation of financial assets. Despite the fact, that many countries suffered significant reductions in asset holdings, the wealth channel does not seem to have caused major long-term damage to economic growth. But then, the collapse of Lehman Brothers brought about the abrupt end to interbank lending, a dramatic increase in the cost of finance and the sudden interruption of global investment flows. The investment channel had serious repercussions on economic performance and growth prospects planet-wide. The ensuing financial collapse triggered a deep recession in the US and Europe and to a drastic decline in global aggregate demand and world trade volumes. The trade channel seriously affected exporting countries all over the world, directly affecting economic output and leading to income contractions. Finally, the recession in high-income countries caused remittances to developing countries to decrease. Because only a few developing countries are highly dependent on remittances, cross-country evidence suggests that the transfer channel was not very relevant. Yet reduced transfers severely affect welfare in economies that are dependent on remittances.

This paper makes the case that countercyclical policies were crucial in determining the extent to which the crisis affected individual countries. In contrast to previous economic crises, many governments embarked on countercyclical policies as soon as the global economic and financial crisis erupted. Our empirical analysis suggests that this most recent economic and financial crisis was less severe than expected and that most countries recovered relatively quickly because their fiscal positions had improved before the crisis – meaning that extensive countercyclical fiscal and monetary policies were affordable.

The crisis nevertheless affected many countries – developed and developing. We have analysed El Salvador, Tajikistan and Cambodia in order to assess the microeconomic effects of the crisis in those developing countries that experienced income contractions or growth revisions in 2009. Evidence from these countries suggests that the crisis primarily affected households through the labour market and through decreased inflows of remittances.

Job losses and wage reductions were observed in all three countries. Job losses in the formal sector appear to have increased pressure on the informal sector, causing incomes to drop and conditions in the labour market to worsen. In El Salvador, Tajikistan and Cambodia, entrepreneurs suffered the greatest income contractions. Informal entrepreneurs were also affected, but to different degrees in each country. In terms of socio-demographic background, households with lower educational backgrounds were more severely affected than more highly educated households, at least in Tajikistan and El Salvador. The impact of the labour market on the poorest households varied considerably between the countries. In countries where the poor mainly live off agricultural production, the poorest deciles fared relatively well. But in El Salvador, where income from labour contributes as much as 50% to household income in the lowest income decile, the poor suffered a lot.

In economies that are dependent on remittances, the transfer channel plays a large role at the micro-level. Households with migrating household members evidenced income reductions in all three countries despite variations in their share of the population, as well as in the amount of the drop in remittances. The reductions were greatest in El Salvador and Tajikistan and least in Cambodia.

During the crisis, changes in social spending significantly affected household incomes in Tajikistan and El Salvador, but not in Cambodia. The poorest deciles in Tajikistan faced reductions in income from social assistance despite government attempts to shield the most vulnerable groups. In El Salvador, in contrast, the poorest households most benefited from increased social spending. In Cambodia, social spending remained negligible during the crisis.

This paper concludes that scaling up existing cash transfer schemes might be the most feasible option for most low and middle income countries in order to protect their populations from the adverse consequences of economic shocks. In times of crisis, cash transfer programmes –including public works – can be extended to increase benefits per capita or to reach more of those vulnerable to the effects of a crisis. However, if there are no pre-existing transfer schemes, it is difficult to target additional social spending to those most in need. Building up cash transfer schemes ad-hoc is more difficult than expanding existing ones. Nonetheless, some countries have been successful in building new transfer schemes during crises. In such cases, a careful assessment about the kinds of programmes that are feasible in light of each country's financial and institutional capacities is indispensable.

1 Introduction

The global economic and financial crisis of 2008–2009 erupted while many developing countries were still suffering from the effects of the fuel and food price crisis of 2007, causing fears that the latest crisis would exacerbate the effects of earlier crisis and lead to considerable increases in poverty and greater rates of unemployment rates worldwide. The relatively modest impact that the economic and financial crisis had on the economic performance of many developing countries gave lie to this fear and with early signs of recovery, many observers concluded that the economic and financial crisis was felt less strongly there than in the developed world. Today, however, three years after the crisis peaked, we still do not know much about the microeconomic effects of the global economic and financial crisis on developing countries.

Early assessments of the effects of the global economic and financial crisis on developing countries were mostly published by the International Monetary Fund (IMF) and the World Bank – soon after the crisis had peaked. Several studies suggested that the impact of the crisis on developing countries was less harsh than expected (IMF 2009; World Bank 2009; World Bank / IMF 2010). Additional insights into the macroeconomic effects of the crisis were provided, among others, by Rose and Spiegel (2009), Berg et al. (2010) and Berkmen et al. (2012), who analysed the factors that determine the degree to which various countries were affected. Both strands of literature help us understand the transmission channels of the crisis. They also indicate the specificities of this particular crisis in comparison with previous crises. But although these studies provide highly relevant insights into the macroeconomic effects of the crisis on developing countries, its micro-level effects remain unclear. The lack of adequate and timely available data for microeconomic impact assessments inspired some authors to conduct simulation studies (e.g. Ravallion 2009; Friedman / Shady 2009), while others experimented with rapid qualitative assessments. Conducted by the Institute of Development Studies (IDS), Asian Development Bank (ADB), International Labour Organization (ILO), World Bank (WB), United Nations Development Programme (UNDP) and World Food Programme (WFP), such assessments aimed at providing timely evidence about the impact of the crisis on firms and households in selected countries and sectors (i.a. WFP 2009; Bauer / Thant 2010; Heltberg / Hossain / Reva 2012). In contrast to the macro-literature, many of these studies found significant effects of the crisis in developing countries, providing evidence that members of more vulnerable groups, such as workers with lower educational backgrounds, informal-sector employees and own-account workers suffered the most during the crisis. However, the representativeness of these findings is weak, since only some countries and sectors were included and because many of the survey sites and sectors were specifically selected because of their vulnerability to the effects of the crisis. It is therefore not possible to derive generalisable results from these findings. Quantitative and nationally representative studies have been provided in only a few cases (McCulloch / Grover 2010; Kroeger / Meier 2012).

This paper furnishes new evidence about the short-term microeconomic effects of the global economic and financial crisis. It is divided into two main parts. The first part – Chapter 2 – reassesses the evidence regarding transmission channels and the immediate macroeconomic effects of the global crisis. It also provides quantitative evidence about each channel's relevance in transmitting the crisis – worldwide, and to developing countries in particular. This part is necessary in order to understand the mechanisms through which countries were affected by the crisis and their effects on the populations of developing countries. The second main part of this paper – Chapter 3 – analyses the short-term effects of the crisis on house-

holds in El Salvador, Tajikistan and Cambodia. It provides nationally representative evidence from three developing countries that were affected by the crisis, although to different degrees and through different channels. The paper thus shows which population groups were most affected by the recent crisis and the effectiveness of national response strategies in protecting households from the global crisis. Chapter 4 concludes with tentative thoughts about how social protection schemes could be designed to cushion some microeconomic effects of economic crises in developing countries.

2 Short-term effects of the economic and financial crisis on developing countries

The global economic and financial crisis led to gross domestic product (GDP) contractions in most of the world. In 2009, at the peak of the crisis, GDP per capita growth became negative in every region except for South Asia (as shown in Figure 1). The global economic and financial crisis most severely impacted Europe and Central Asia, North America, Latin America and Caribbean, and East Asia and Pacific.

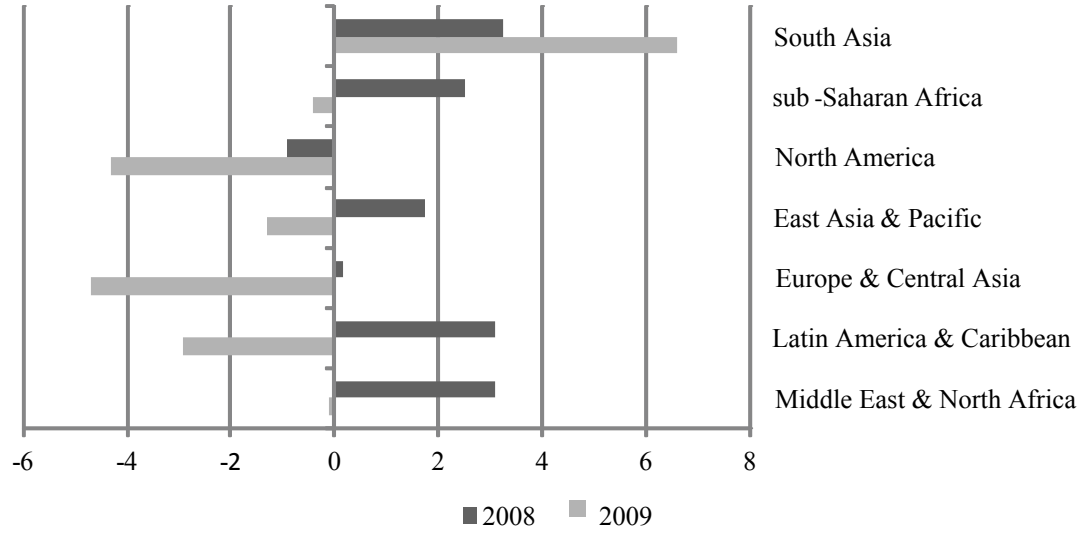
High income countries were the first to suffer the consequences of the breakdown of the financial markets in the United States. They also faced the deepest overall impact, with average GDP per capita growth rates around -4.5% in 2009 (Figure 2). But although the growth rate of GDP per capita remained positive for the group of low and middle income countries as a whole, it did slow down markedly and turned negative for some of them. The effect of the crisis on developing countries is particularly important because even small corrections to the growth prospects of developing countries can threaten progress in poverty reduction and make it more difficult to reach the Millennium Development Goals.

The rest of this chapter provides more detailed evidence about how the economic and financial crisis was transmitted from its epicentre to the rest of the world, and the relevance of these effects to developing countries. Section 2.1 explains the channels that were responsible for transmitting the crisis worldwide, and to developing countries in particular. Section 2.2 describes different policy responses that served to partly offset the effects of the crisis and Section 2.3 quantitatively assesses the factors that determine the short-term macroeconomic effects of the global crisis.

2.1 Transmission channels of the global economic and financial crisis

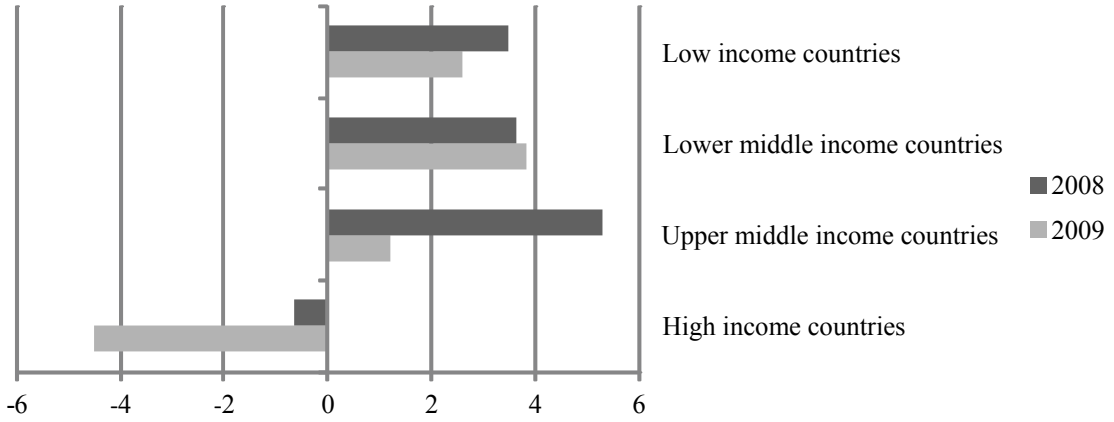
Although the subprime crisis started in the United States, its repercussions were felt worldwide. The collapse of Lehman Brothers in autumn 2008 transformed the financial crisis into a global economic crisis, which was transmitted to the rest of the world through four main channels: the wealth channel, the investment channel, the trade channel and the transfer channel. The trade and the investment channels were most responsible for high output losses at the macroeconomic level. The transfer channel also played an important role in the global transmission of the crisis, but because only a few countries are highly dependent on inflows of remittances, its effect is more visible at the micro- than the macro-level.

Figure 1: GDP per capita growth by region



Source: World Bank (2012)

Figure 2: GDP per capita growth by country per-capita income level



Source: World Bank (2012)

The crisis was transmitted in sequences. First, the subprime crisis led to the worldwide depreciation of financial assets, what is referred to as the wealth channel. The collapse of Lehman Brothers was followed by an interruption in global interbank lending and the abrupt end to investment flows: the investment channel. The financial collapse led to deep recessions in the US and Europe, and to drastic declines in global aggregate demand and trade volumes. This trade channel affected exporting countries all over the world. Finally, the transfer channel refers to the drop in public and private transfers to developing countries caused by decreasing public revenues and rising unemployment in high income countries.

Sections 2.1.1 to 2.1.4 show how each of these four channels helped transmit the crisis to developing countries.

2.1.1 The wealth channel

Although the wealth channel caused the worldwide depreciation and destruction of financial assets that were highly exposed to US assets backed by sub-prime mortgages, it did not contribute significantly to the transmission of the economic and financial crisis (Lane / Milesi-Ferretti 2010). In contrast to expectations at the start of the financial crisis, in most developing countries only some assets were destroyed.

A country's economic structure determines the degree to which the destruction of assets might result in lower rates of growth. This is especially true if investments are financed from assets holdings and if the destruction of assets is accompanied by lower rates of subsequent investment. The severity of this effect depends on the initial endowment of financial assets, which means that it should be most felt in rich countries. High income countries have the highest average share of net foreign assets in GDP; in low- and middle-income countries the share is rather modest (Figure 3). The highest shares of foreign assets in GDP can be found in the Europe and Central Asia (ECA), East Asia and Pacific (EAP) and Middle East and North Africa (MENA) regions (Figure 4).

To assess the relevance of this channel, we compared the share of net foreign assets in GDP over time and across regions and country groups[1] and found no significant reduction in the share of net foreign assets in GDP from 2007 to 2009. While this share dropped slightly from 2007 to 2008 in most regions, and – except for high income OECD countries – for all income levels as well, in 2009 it recovered and in many cases, surpassed 2007 levels.

The decrease in net foreign assets did not seem dependent on the initial endowment: some regions and groups of countries saw almost no change in their percentage of net foreign assets of GDP while others experienced change independent of the initial level. The depreciation of foreign assets seems to have been greatest for reporting economies in the Middle East and North Africa, and in East Asia and Pacific, as well as for high income non-OECD countries – but these were not the regions and country groups that suffered the deepest growth contractions during the financial crisis.

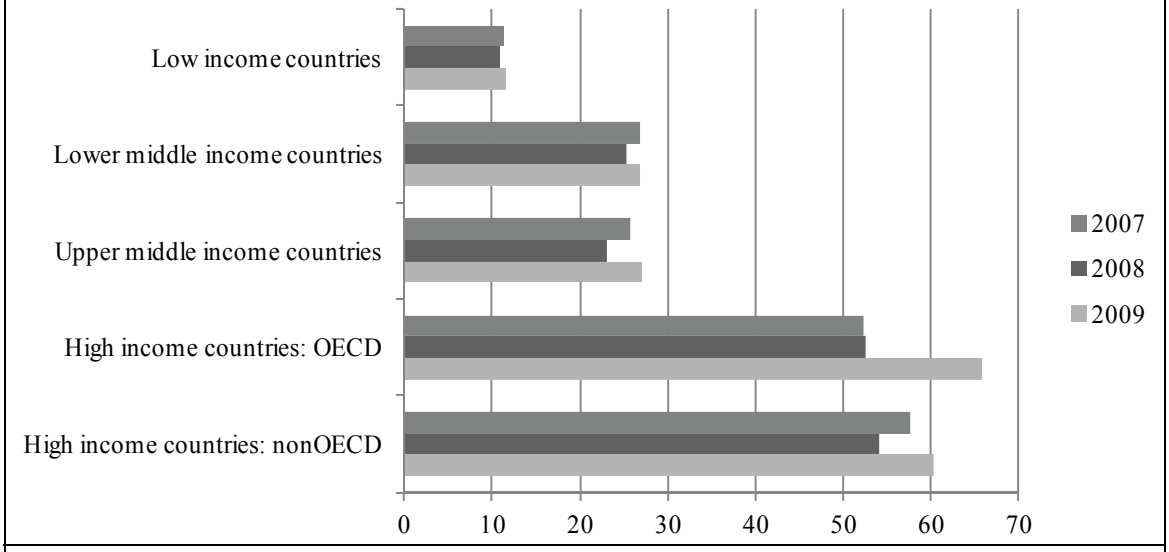
In contrast to our expectations, 2009 brought a remarkable increase in the percentage of net foreign assets in GDP in certain regions and in high income countries. This could be explained by the fact that if the absolute values remain constant, a decrease in GDP automatically increases the share of net foreign assets in GDP. This is plausible given the contractions in GDP in Latin America and Caribbean (LAC), EAP, ECA and North America (NA), but it does not appear to be the only explanation. It seems as if markets were able to recover relatively quickly from the destruction of assets. For example, countries in the MENA region were able to accumulate foreign assets even in 2008 and 2009 because of the persistently high fuel prices.

2.1.2 The investment channel

The investment channel significantly contributed to the international transmission of the financial crisis, causing deep impacts on developing and developed economies. As a consequence of the Lehman Brothers' crash in 2008, interbank lending collapsed entirely,

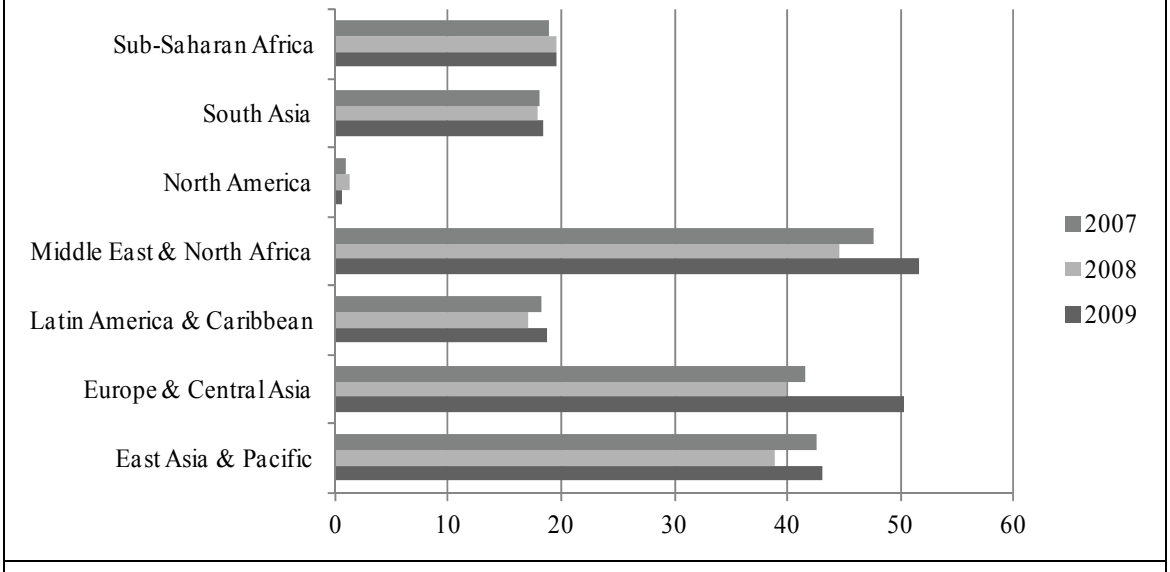
1 We used the share of net foreign assets in GDP as an indicator for the destruction of financial assets because it was the only indicator available at the aggregate level. In addition, most financial assets were depreciated in the US; for all other countries, the effect would have been most evident on foreign, as opposed to total, assets. This measure is imprecise because it changes with fluctuations of the GDP.

Figure 3: Net foreign assets (% of GDP) by country per-capita income level



Source: World Bank (2012)

Figure 4: Net foreign assets (% of GDP) by region



Source: World Bank (2012)

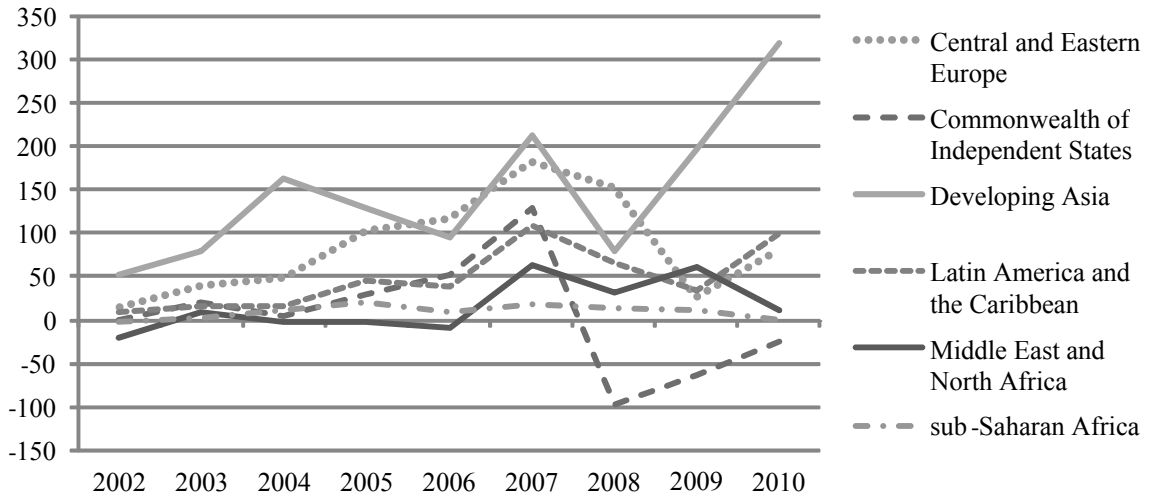
leading to the worldwide interruption of investment flows. Countries with high foreign investment inflows prior to the onset of the crisis were especially susceptible.

An interruption of financial flows seriously affects economic growth because capital becomes more expensive. Higher borrowing costs and tighter credit rationing usually lead to lower investment rates and lower future economic growth. Drastic changes – such as those observed during the global economic and financial crisis – immediately affect output levels because the transition from high to low capital-output ratios leads to discontinuities in the production process and to output losses.

The sharp drop in financial flows in 2007 and 2008 affected almost all developing regions. Only the Commonwealth of Independent States (CIS) suffered net outflows of private finance (Figure 5). Other regions that experienced pronounced contractions were Developing Asia and Central and Eastern Europe. Although there were huge variations, contractions for the whole group of developing and emerging economies were modest compared to those in high income countries, where in 2009, net private financial inflows fell on average by 90.6% (World Bank 2012). Between 2008 and 2009, net inflows to all high income countries fell by a total of US$ 630 billion. A clear overlap is observed of the regions and country groups affected by the financial effects and those that suffered income contractions at the peak of the crisis.

Not only the share of foreign liabilities in GDP, also the composition of financial flows and their stability determined whether or not this channel affected a particular country. The huge differences between high, middle and low income countries can be explained partly by poorer countries' limited integration in international financial markets[2], and also by the higher share of more stable Foreign direct investment (FDI) in total liabilities in middle income, as compared with high income countries[3]. As shown in Figure 5, the financial crisis was preceded by a period of above-average growth of international investment flows, which may have been of questionable sustainability even before the crisis. The composition of pre-crisis investment flows is likely to have influenced the severity of the contraction of post-crisis inflows (after 2008).

Figure 5: Net private financial flows by region (in US$ billions)



Notes: Net private financial flows comprise net private direct investments, net private portfolio flows and net other private financial flows. Data are available for developing regions only.

Source: IMF (2011)

2 The average foreign liabilities share of GDP is 88.3%, 72.2% and 82.7% for low income, lower middle income and upper middle income countries respectively, and 287.1% for high income countries (IMF 2010a).

3 The average share of FDI in total investment stocks is 42.6% in upper middle income countries and 44.8% in lower middle income countries. In high income countries the share is 20.5% (IMF 2010a).

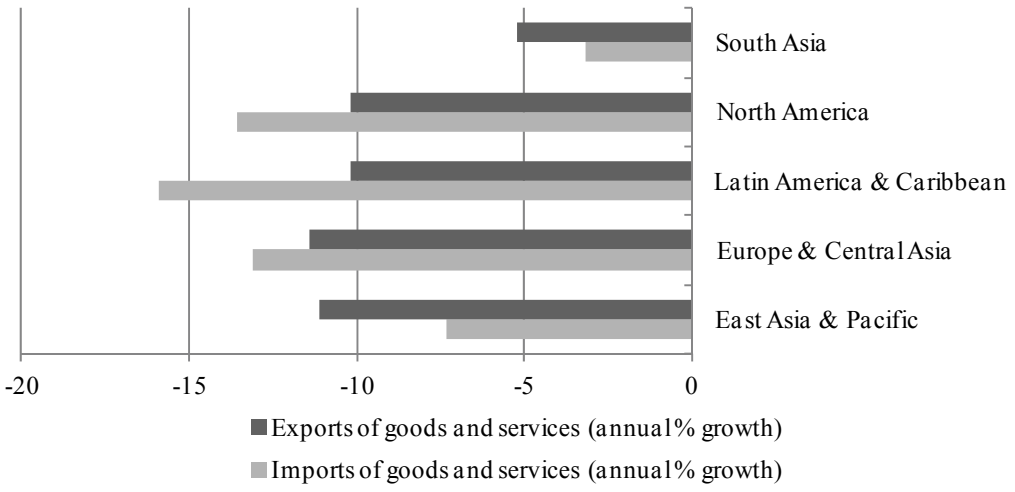
2.1.3 The trade channel

The interruptions in trade flows were felt in every region and significantly contributed to the international transmission of the economic and financial crisis. Trade flows slowed in late 2008 and collapsed completely in 2009 (Ocampo et al. 2010), that is, the trade channel became significant after the wealth and investment channels.

In Western Europe and the US, recessions led to a sharp decline in the demand for goods and services from all over the world. Export markets in developed and developing countries were affected, with major repercussions on aggregate production and employment in the affected economies.

Import and export growth was negative in 2009 for every region of the world (Figure 6), with the value of exports decreasing by more than 10 per cent except in South Asia. Export contractions were most pronounced in Europe and Central Asia, and in East Asia and Pacific, followed by Latin America and Caribbean, and North America. These four regions were also the regions with the sharpest growth contractions in 2009.

Figure 6: Export and import growth in 2009 by region



Notes: Regional data for MENA and sub-Saharan Africa (SSA) are not available.

Source: World Bank (2012)

2.1.4 The transfer channel

With a few exceptions, international transfers in the form of official aid and private remittances remained more or less stable during the financial crisis. This suggests that the transfer channel contributed less than expected to the international transmission of the crisis (e.g. Ocampo et al. 2010). Nonetheless, it is likely that those regions and countries with reduced transfer inflows also experienced lower income growth.

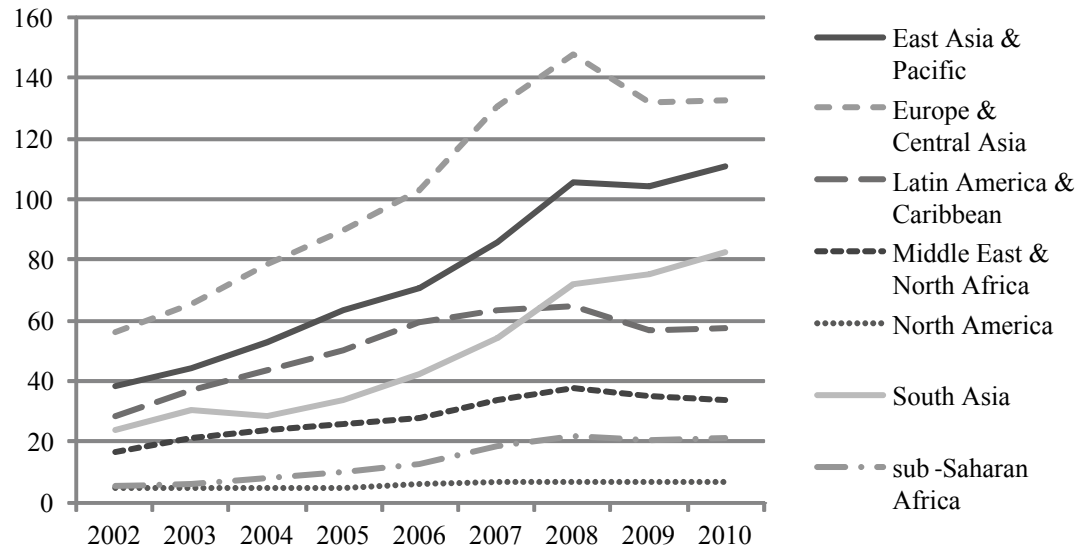
Since the recessions were deepest in high income countries, countries that depend on them for regular flows of remittances or development assistance should have been affected (Brach / Loewe 2009). While public transfers mainly affect GDP through government spending, reduced private transfers affect household income and consumption.

Both government spending and household consumption directly contribute to GDP, meaning that reductions in international transfers almost always affect economic growth.

Official aid flows remained stable during the crisis, with the Middle East and North Africa the only region that experienced negative growth in Official Development Assistance (ODA) (World Bank 2012). In all other regions, ODA grew throughout the crisis, so it is unlikely that reduced aid flows played a role in transmitting the crisis to developing and emerging economies.

During the crisis, remittances inflows grew steadily in East Asia and Pacific as well as in South Asia, and remained more or less constant in sub-Saharan Africa and the Middle East and North Africa. Inflows of remittances decreased in only two regions – Europe and Central Asia, and Latin America and Caribbean (Figure 7). However, the fact that in 2009 these two regions posted significant output losses suggests that the drop in remittances inflows may have played a role in the economic performance of some countries and regions. In the ECA region, which experienced the strongest decline, remittances fell by as much as 10.8% in 2009 (World Bank 2012).

Figure 7: Remittances inflows by region (in current US$ billions)



Source: World Bank (2012)

2.2 Policy response

Some countries were able to withstand the transmission effects of the crisis because their governments were willing and able to react in good time. This crisis appears to have been less severe than expected, with most countries recovering from it relatively quickly due to the improved fiscal positions of many countries prior to the crisis and thanks to extensive countercyclical policies that were initiated as soon as the crisis erupted (Ocampo et al. 2010; World Bank 2010a). Policy response variously influences the incidence and severity of a crisis.

First, a country's exchange rate regime can influence the severity with which an external shock is transmitted to the domestic market. Berkmen et al. (2012) suggest that countries with flexible exchange rates are better equipped to handle external shocks, a finding that was supported by Lane and Milesi-Ferretti (2010).

Second, increased government spending can stimulate internal demand, thereby offsetting the negative effects of trade contractions. In all regions, government spending increased during the crisis (IMF 2011) and in many countries and regions sound economic and fiscal policies were able to dampen its adverse effects (IMF 2010b). However, the timing and scale of government spending growth varied between regions. Governments in Latin America and Caribbean and in Developing Asia began to increase spending in 2007, whereas governments in the Commonwealth of Independent States and the Middle East and North Africa sharply increased spending only in 2009.

Third, initial debt can serve as an indicator for a government's ability to react to a crisis. In the years prior to the global financial and economic crisis of 2008, many developing countries had managed to improve their fiscal position and reduce external debt, leading to expectations that these countries would suffer less during the financial crisis. Initial debt levels can also serve as indicators for the sustainability of countercyclical policies.

Data regarding government manœuverability is not available at the aggregate level; the significance of these factors is assessed in the next section.

2.3 Determinants of the short-term macroeconomic effects

This section assesses whether the huge cross-country variation in macroeconomic performance observed in 2009 can be explained by the exposure of individual countries to the transmission channels of the global economic and financial crisis. This is tested in a cross-country regression analysis, which shows that three main factors determine the depth to which an economy was affected by the global crisis: the country's trade structure; its financial structure; and its willingness and ability to react to the crisis. This indicates the significance of a country's vulnerability to the two most relevant transmission channels of the global crisis –the investment and the trade channels. However, it also shows that, at least in the short-term, prudent countercyclical fiscal and economic policies were crucial for cushioning the effects of the crisis in developed and developing countries.

Section 2.3.1 describes the empirical approach in more detail; the regression results for all countries – and specifically for low and lower middle income countries – are discussed in sections 2.3.2 and 2.3.3.

2.3.1 Methodological approach

In our empirical analysis, we tested the country characteristics that can be used to predict how strongly an economy was affected by the global economic and financial crisis. We used the difference in GDP per capita growth rates[4] – the difference between the growth

4 This value is obtained by subtracting the average growth rate between 1997 and 2007 from the actual growth rate in 2009. This indicator seems to best represent the crisis-induced disruption of general

rate in 2009 and the average of growth rates in the years before the crisis – as a proxy for the severity of the short-term effects of the global crisis. In contrast to existing literature, we took into account not only the variables that can predict a country's vulnerability to the four transmission channels of the crisis, but also the variables that represent a country's resilience to the crisis.

Potential explanatory variables were grouped into five categories: proxies for a country's vulnerability to each of the four transmission channels, plus variables that proxy a country's resilience. In each category, the two or three variables with the highest explanatory power (the strongest bivariate correlation) were retained.[5] The estimation strategy was an Ordinary Least Squares (OLS) model. We conducted cross-sectional regressions with different combinations of our explanatory variables in order to identify which variables are robust under different specifications. Our dataset contained 94 to 112 countries, depending on the specified model. The results are presented and discussed in the following section with reference to findings in the literature.

In Section 2.3.3, the regression was restricted to low income and lower middle income countries, in order to test the validity of our results for the subset of poorer countries. This step was also necessary for testing if variables that are not significant in the global context might have predictive power for poorer countries.

2.3.2 Regression results for all countries

The quantitative analysis reveals that much of the observed global variance in the macroeconomic effects of the global economic and financial crisis can be explained by just a few variables. First, dependency on financial flows negatively impacted on macroeconomic performance during the financial crisis. The global disruption of international financial flows hit countries with a large share of volatile investment inflows especially hard. Second, the share of trade in GDP influenced the severity of the crisis impact. Some countries were more affected by the crisis than others because of their respective trade structures and degrees of economic integration into global value chains, which – especially if a country was linked to the crisis epicentres – partly accounts for the considerable regional differences. Countries dependent on exports to the United States and Western Europe were especially affected by the crisis. Third, governmental reactions were of great significance. This section suggests a strong positive connection between changes in government spending during the crisis and its effects. The fact that many countries instituted countercyclical policies during the crisis can help explain why in many countries, the effects of the crisis were less severe than expected and the recovery more rapid than predicted.

Two models are reported in Table 1. Our preferred model is the first one, but we also report the results of the second model, which serves as a robustness check. In both models, regional dummies were included because they increase the model's predictive power and

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growth trends. Just looking at the growth rate would not reveal the differences between countries with long trends of low growth rates and countries that were performing well before the crisis but which suffered greatly from its impact. Unfortunately, it remains impossible to abstract from other reasons for the change in output growth.

5 See Annex II for a list of variables, and their definitions and sources.

Table 1: Regression results for all countries

Dep. Var.: Difference in GDP per capita growth rates (2009 – average 1997–2007)

	(1)			(2)		
Short-term debt (% of total external debt)	-0.093	***	(0.04)			
Short-term debt (squared)	0.003	***	(0.00)			
Financing via int'l capital markets (% of GDP)	-0.370	**	(0.18)			
Financing via int'l capital markets (squared)	0.018	**	(0.00)			
Private capital flows (% of GDP)				-0.177	**	(0.08)
Private capital flows (squared)				0.005		(0.00)
GDP per capita (constant US$, in 1000)	-0.487	*	(0.29)	-0.163	***	(0.05)
Net foreign assets (share of GDP, log normal)				0.872	**	(0.41)
Trade (% of GDP)	-0.032	***	(0.01)	-0.033	***	(0.01)
Net exports (% of GDP)	0.047	*	(0.03)	-0.024		(0.03)
Exports to US & W. Europe (% of exports)	0.108	***	(0.04)	0.064	*	(0.03)
Exports to US & W. Europe (squared)	0.000		(0.00)	0.001		(0.00)
Exports to US & W. Europe (cubic)	-0.000	***	(0.00)	-0.000	***	(0.00)
General government gross debt (% of GDP)	0.043	**	(0.02)	0.045	***	(0.01)
General government gross debt (squared)	-0.001	***	(0.00)	-0.000	***	(0.00)
Total reserves (% of GDP)	0.030		(0.04)			
Total reserves (squared)	0.003	***	(0.00)			
Dummy government spending increased	2.900	***	(0.94)	2.476	**	(0.96)
Constant	-0.365		(1.62)	2.628	**	(1.25)
Regional dummies included	yes			yes		
Observations	94			112		
R-Squared	0.73			0.64		

Notes: Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Source: Author

have a positive influence on the normal distribution of the residuals. Furthermore, they only affect the size, not the sign, of our estimates and lead to somewhat more conservative predictions. For a comparison of the results with and without regional dummies, see Annex I.

Wealth levels

We were not able to determine the relevance of wealth levels for explaining the difference in GDP per capita growth. We found that GDP per capita levels before the crisis were negatively correlated with our measure for crisis impact. But including the logged share of net foreign assets to GDP revealed its strong positive relationship to our dependent variable. Apparently, the fact that financial assets were destroyed during the crisis was irrelevant to subsequent growth rates. It seems plausible to conclude that countries with high shares of net foreign assets were less vulnerable to the other effects of the crisis and so fared better. The strong negative sign of the GDP level coefficient may result from the fact that the crisis started in the US and Western Europe, where it was felt most acutely.

Financial linkages

Our findings support the hypothesis that the investment channel accounted for a large share of the macroeconomic effects of the crisis. Both the composition of investment flows – measured as the share of short-term debt in the total external debt – and the relevance of the economy's external financing had statistically significant negative coefficients (Table 1). Two different measures for the importance of external financing were tested: first, the share of financing via international capital markets in GDP (the sum of gross bond issuance, bank lending and new equity placements) and second, the share of private capital flows in GDP (net foreign direct investments and portfolio investments). Both were found to be statistically significant with high negative coefficients. This implies that countries that were particularly dependent on foreign investment inflows prior to the crisis experienced deeper recessions than those that were not. Similar results are reported in Berkmen et al. (2012) and in Lane and Milesi-Ferreti (2010).[6]

Trade dependency

Statistical evidence also suggests that the degree to which a country was exposed to the trade channel correlates with the difference in 2009 GDP per capita growth. Our analysis revealed that trade dependent economies – especially those with the US and Western Europe as export partners – were harder hit by the global crisis than other countries. Since trade was a major channel for globally transmitting the crisis, it understandably explains part of the incidence and severity of the crisis at the macroeconomic level.

During the crisis, the share of trade in GDP was negatively correlated with economic growth, which indicates that more open economies may be more vulnerable. In contrast, net exports were positively correlated with the difference in GDP growth. However, this effect is only weakly significant and turns negative in the second model.

Dependency on the US and Western Europe as export partners (measured by the share of exports to the US and Western Europe in total exports) also seems to have influenced the degree to which an economy was affected by the economic and financial crisis. However, the relationship was not linear, as can be seen in Figure 8, where the lines show the difference between the linear fit as predicted by OLS and a non-parametric fit. The relationship between GDP per capita growth and trade with the US and Western Europe was clearly negative for the lower half of the range and turned positive for countries with a greater share of trade with the US and Western Europe. To better approximate this relation, we included the squared and cubic transformations of this variable in our regression model and found that they, too, are statistically significant. The finding that trade direction is correlated with the dependent variable contradicts the results of Rose and Spiegel (2009), who found little evidence that international financial or real linkages to the crisis epicentre, namely the United States, influenced the macroeconomic impact of the crisis. [7]

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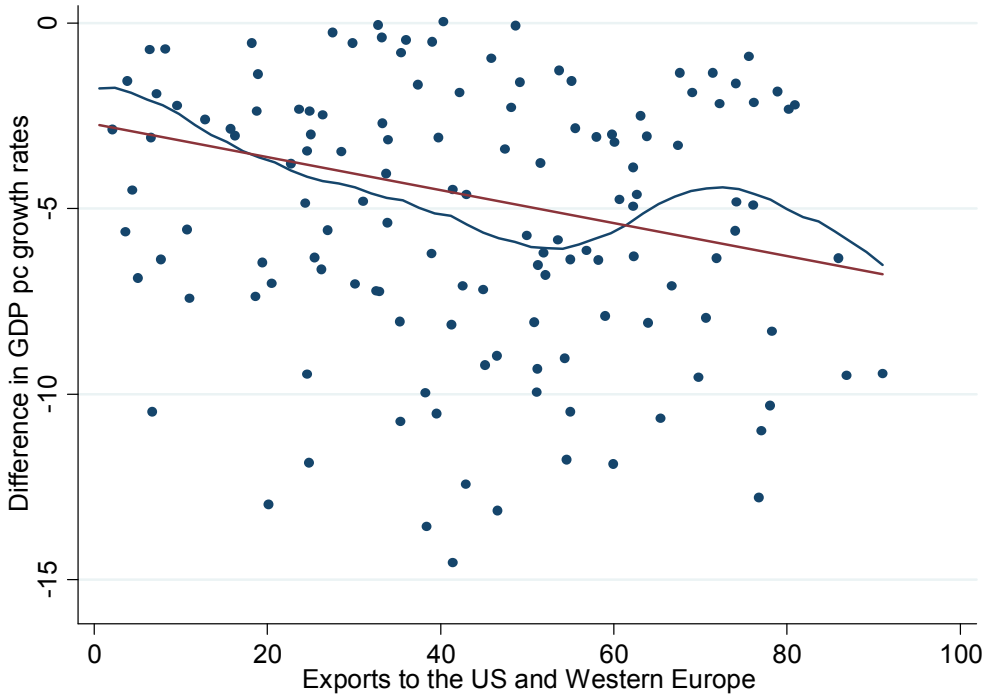
6 Differences in the coefficients can be attributed to the dependent variable used or the countries studied. While Berkmen et al. and Lane and Milesi-Ferretti analysed only developing and emerging economies, this paper focuses on all the countries. Furthermore, the dependent variable in the model of Berkmen et al. is the amount of growth forecast revisions after the crisis erupted in September 2008.

7 Rose and Spiegel focused on international linkages that could have been responsible for the global spread of the crisis. They used real GDP growth in 2008 combined with changes in stock markets, exchange rates and country credit ratings as indicators for the incidence of the crisis.

Figure 8: Scatterplot change in GDP per capita growth – exports to US and Western Europe



Notes: Lines show the linear fit and the local linear regression line

Source: Author

The sectoral composition of trade does not appear to be correlated with the macroeconomic impact of the financial crisis. Lane and Milesi-Ferretti (2010) suggest that countries that rely on exports of durable and investment goods suffered higher export losses during the crisis because these goods are more income elastic. Berkmen et al. (2012) also find that countries that export advanced manufactured goods tended to be harder hit by the crisis. This finding is not confirmed by the model applied here: countries with larger shares of manufactured goods in exports were not found to have experienced more severe economic slowdowns.

International transfers

In contrast to the other channels, little evidence has been found that the transfer channel was significant at the macro-level in the international transmission of the economic and financial crisis. There is no evidence that countries that depend more on private transfers, as measured in the share of remittances in 2007 GDP, experienced lower GDP per capita growth during the crisis than in previous years. There is also no evidence that the share of ODA in income was correlated with the difference in GDP per capita growth during the crisis. This finding is unsurprising, since aid flows did not slow during the crisis. But no positive correlation was found, either.

Because the World Bank increased its lending volumes during the crisis, we also tested whether recipients were less affected by the crisis than non-recipients. But we discovered that lending volumes in 2007 and in 2009, as well as a dummy that took the value one (if lending increased from 2007 to 2009), are not correlated with our dependent variable. This also held for the subsample of low and lower middle income countries (as reported in Sec-

tion 2.3.3). However, the effects of increased World Bank lending may have only been felt after 2009 and could have helped recipient countries recover from the global economic and financial crisis more quickly. This cannot be assessed at this time.

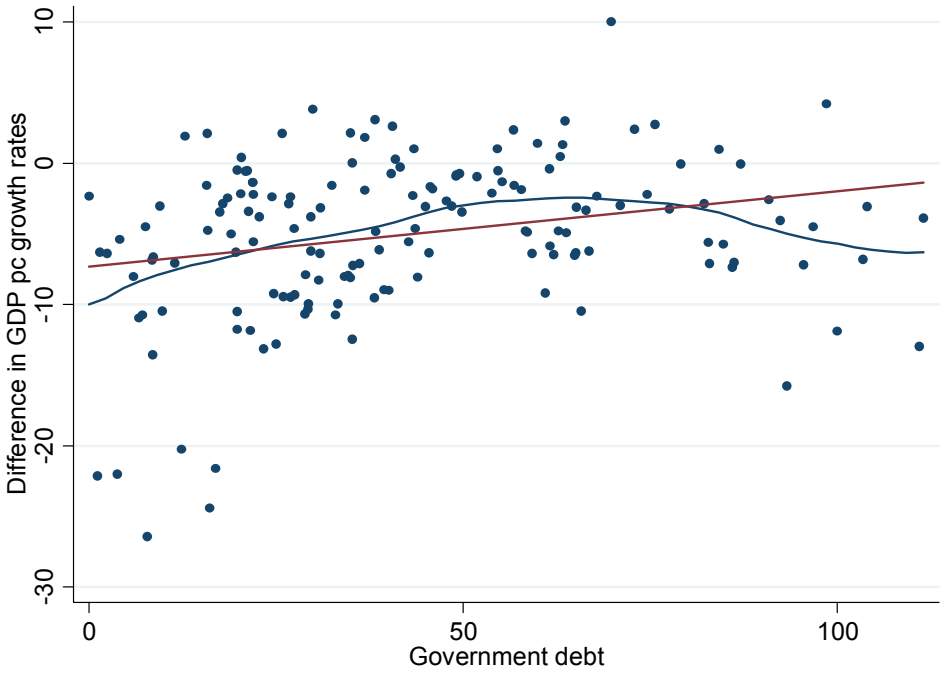
Government intervention

We found some evidence that countries that reacted to the global crisis by adopting countercyclical policies as soon as the crisis erupted were at least partially able to offset its effects.

Our findings support the hypothesis that countercyclical policies have partly offset the macroeconomic effects of the crisis. As can be seen in Table 1, the change in the government spending dummy, which takes the value one if the growth rate of government spending was higher in 2009 than in 2007, is positively correlated with the difference in 2009 GDP per capita growth. Because doubts have been raised about the sustainability of such policies, it would be interesting to see how these countries fared in the years after 2009.

To test the robustness of our finding that countercyclical policies partly offset the effects of the global crisis, we also included variables to represent the ability of governments to react to the crisis: the amount of international reserves relative to GDP and the amount of government debt relative to GDP. Both variables are positively correlated with the dependent variable, which is somewhat surprising since one would expect a negative relationship for government debt. However, a closer view reveals that the relationship between government debt and our dependent variable resembles a negative quadratic function (Figure 9). While government debt and change in GDP per capita growth are positively correlated at lower debt levels, this relation turns negative for debt levels that are higher than about 60% of GDP.

Figure 9: Scatterplot change in GDP per capita growth – government debt



Notes: Lines show the linear fit and the local linear regression line

Source: Author

The adjustment of exchange rates, in contrast, seems not to have influenced the impact of the economic and financial crisis. No evidence was found that the de jure exchange rate regime or the de facto exchange rate adjustment in 2009 (using the US dollar as the point of reference) influenced the impact of the crisis. This finding contradicts the literature. For example, Berkmen et al. suggested that countries with flexible exchange rates should be better able to handle external shocks (2012). Their findings were supported by Lane and Milesi-Ferretti (2010) – but not by our econometric estimation.

2.3.3 Regression results for low and lower middle income countries

In a second step, we concentrated on the difference between high and upper middle income countries on one hand, and low and lower middle income countries on the other – by replicating the regression for the subset of low income and lower middle income countries. The results are reported in Table 2.

Table 2: Regression results for Lower middle income country (LMIC) & Low income country (LIC)

Dep. Var.: Difference in GDP per capita growth rates (2009 – average 1997–2007)	(1)			(2)		
Short-term debt (% of total external debt)	-0.157	***	(0.04)	-0.105	**	(0.05)
Short-term debt (squared)	0.005	***	(0.00)	0.004	***	(0.00)
GDP per capita (constant US$, in 1000)	-2.196	***	(0.61)	-1.931	**	(0.86)
Trade (% of GDP)	-0.029	**	(0.01)	-0.019		(0.02)
Net exports (% of GDP)	0.068	**	(0.03)	0.020		(0.04)
Exports to US & W. Europe (% of exports)	0.077	*	(0.05)	0.054		(0.04)
Exports to US & W. Europe (squared)	-0.001		(0.00)	-0.001		(0.00)
Exports to US & W. Europe (cubic)	-0.000	***	(0.00)	-0.000	***	(0.00)
General government gross debt (% of GDP)	0.067	***	(0.02)	0.046	**	(0.02)
General government gross debt (squared)	-0.001	**	(0.00)	-0.001	**	(0.00)
Total reserves (% of GDP)	0.050		(0.05)	0.051		(0.05)
Total reserves (squared)	0.006	*	(0.00)	0.007	*	(0.00)
Dummy government spending increased	4.227	***	(1.52)	4.013	***	(1.09)
Constant	-0.592		(1.95)	-8.101	**	(3.99)
Regional dummies included	no			yes		
Observations	53			53		
R-Squared	0.71			0.79		

Notes: Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Source: Author

Interestingly, the results did not change much when only low and lower middle income countries were considered. Once again, a country's financial structure and trade dependency explain much of the crisis impact. The role of policy response seems to be even more important in low and lower middle income countries.

For the poorer set of countries, the share of short-term debt in total external debt is also strongly and negatively correlated with the crisis impact. But because our financial inte-

gration measures were both not statistically significant, they were dropped. Perhaps this is because there is less variance in these variables for poorer countries.

Trade openness is still negatively correlated with the dependent variable, although only as long as regional dummies are not included. Interestingly, a non-linear relationship remains between the share in exports to the US and Western Europe and the difference in 2009 GDP per capita growth relative to the pre-crisis years.

For poorer countries, government intervention seems to be more important than for richer countries. The coefficients of the government spending dummy, as well as those of the government debt and public reserves variables, continue to be statistically significant and become even larger when only low and lower middle income countries are considered.

In the second model, we also included variables that do not influence the total set of countries but might be more relevant for developing countries – such as dependency on remittances, aid flows and World Bank loans. These variables are not statistically significant. We also tested the relevance of export structure for the smaller subset of countries, but did not find any statistical relationship. Therefore, it seems valid to conclude that similar characteristics determined the severity of the global crisis in the economies of developing and developed countries.

3 Short-term effects of the economic and financial crisis on households in El Salvador, Tajikistan and Cambodia

In Tajikistan, El Salvador and Cambodia, the crisis affected households mainly through reduced labour income and reduced inflows of remittances, with different effects on formal and informal employment. Job losses in the formal sector put additional pressure on the informal sector, and increased informal employment caused general deteriorations in employment conditions and wage reductions in the labour market (UN-DESA 2011; Velde et al. 2009). Disproportional income contractions for entrepreneurs were observed in all three countries. Informal entrepreneurs were also affected, but to different extents in each country. In terms of social characteristics, households with less education were more severely affected by the crisis than households with higher education, especially in terms of labour market income. Concurring with existing evidence, we conclude that households of all groups suffered income losses because of the crisis, but that less educated and more vulnerable households seemed to be less able to find alternative employment opportunities.

We also show that there is considerable variation in how labour market effects impact the poor. In countries where the poor mainly live from agricultural production, the poorest deciles fared relatively well, whereas in El Salvador, where labour income contributes as much as 50% to household income in the lowest income decile, the crisis caused real suffering among the poor.

The transfer channel seems to have played a very important role at the micro-level. Households with migrating household members were faced with income reductions in all countries, despite variations in their share of the overall population and the extent to which remittances dropped off. The effect was most pronounced in El Salvador and Tajikistan

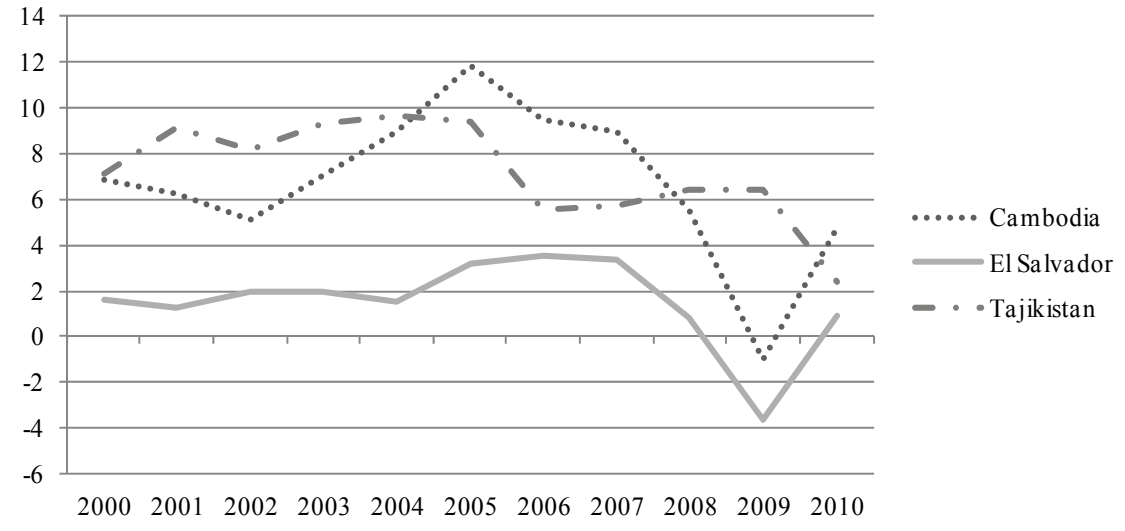
and least pronounced in Cambodia. In contrast, reduced social spending noticeably affected the poorer populations of Tajikistan, while social spending remained negligible in Cambodia and increased in El Salvador. The poorest households in El Salvador benefited from increased social spending.

These findings are elaborated in the following sections: Section 3.1 describes the methodological approach and Sections 3.2, 3.3 and 3.4 discuss the effects of the global economic and financial crisis on households in El Salvador, Tajikistan and Cambodia, respectively. The country sections all follow the same order: first, evidence is provided about the respective transmission channels and each country's reaction to the crisis. Then microeconomic effects are assessed through analysing changes in income by income levels and socio-demographic characteristics. Finally, income changes for the subsample of the poorest 30% of the population are analysed in greater detail.

3.1 Methodological approach

The micro-level impact of the global economic and financial crisis was assessed by comparing data from three developing countries that were affected by the crisis, but to different degrees and through different channels (Figure 10). El Salvador, Tajikistan and Cambodia were selected using the following considerations: only low and middle income countries with poverty rates above 2% were considered;[8] and just export-dependent countries (where exports account for more than 20% of GDP) were eligible, because we consider the trade channel to have been one of the main transmission channels of the crisis. Only countries with growth corrections (April 2008 projections compared to October 2010 data, IMF 2011), negative GDP or export growth came into question, as well as countries where household surveys had been conducted in 2007 and 2009 – thus permitting analysis

Figure 10: Annual real GDP per capita growth (in %)



Source: World Bank (2012)

8 Poverty rates are measured as poverty headcount ratio at US$ 1.25 a day (PPP).

of the impact of the crisis on different population groups shortly before and after the economic and financial crisis. The following surveys were used: the Encuesta de Hogares de Propósitos Múltiples (EHPM), conducted by the Dirección General de Estadística y Censos in El Salvador; the Living Standards Measurement Survey (LSMS)[9] in Tajikistan conducted by the World Bank in collaboration with the State Committee on Statistics of Tajikistan; and the Cambodia Socio-Economic Survey (CSES) conducted by the National Institute of Statistics of Cambodia.

The analysis of the micro-level effects was based on the comparison of average incomes in various population groups before and after the crisis. Sample averages for different groups were calculated from nationally representative household surveys, taking into account stratification and clustering, and using the sample weights provided by the statistical organisations responsible for the survey design and data collection. Groups were created by classifying households according to criteria that can be compared before and after the crisis, as well as between countries. The criteria were selected to be as constant as possible, at least in the short term, for example household structure and the head of household's sex and age group, as well as social characteristics, such as the educational background and employment status of the household's primary breadwinner. The household's access to transfers is also considered. Some of these variables are clearly endogenous to structural changes such as an economic crisis, but wherever this is so, we tried to account for potential changes by also taking changes of group sizes into consideration.

Average income was calculated as monthly per capita income and converted into constant international dollars to ensure comparability between countries and over time. The dependent variable was calculated so that it can be compared despite differences in the three countries' economic structures and survey designs. Monthly income per capita was calculated by adding up household income from all sources then dividing that sum by the number of household members. To ensure inter-temporal and cross-national comparability, income was converted to the constant 2005 international dollar in purchasing power parities (PPP).

Our methodological approach suffers from inaccurate price data. Converting income from current local currency units (LCU) to constant 2005 international dollar (PPP) is the best way to make data comparable not just before and after the crisis, but also between countries. However, the 2007 food crisis caused an unprecedented rise in food prices that probably has not been completely captured by the available price data. The lack of good data complicates our research, making it more useful to consider differences between groups rather than study absolute changes. Assuming that income increased for all groups, which groups saw smaller increases, and which saw more? The data at hand allows us to answer such questions.

9 Although the Tajik dataset is a panel dataset, in order to ensure comparability with the other two datasets it was treated as repeated cross-sections. Employing the panel structure of the dataset, Kroeger and Meier (2012) find similar results. This suggests that our approach does not exclude any important insights and reduces the risk of measurement error biasing estimates.

3.2 El Salvador

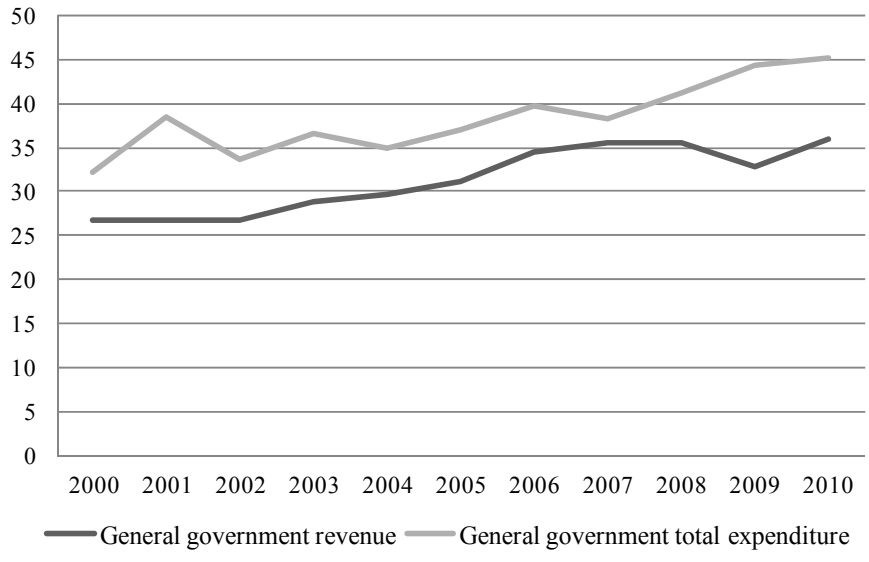
El Salvador is a lower middle income country with poverty rates[10] of 13.4% in 2007 (World Bank 2012). The country's regional proximity to the United States and its dependency on the US as a trade partner and host country for most of its migrants made El Salvador vulnerable to the effects of the global economic and financial crisis, especially through contractions in trade and inflows of remittances. Indeed, El Salvador was the Central American country most affected by the crisis. Micro-level repercussions seriously affected poorer households. The macro- and microeconomic effects of the crisis in El Salvador are derived in Sections 3.2.1 and 3.2.2.

3.2.1 Macroeconomic effects and policy responses

Among the countries we consider here, El Salvador was the one most affected by the global economic and financial crisis. In 2008 GDP per capita growth decelerated and in 2009 it turned negative (annual average -3.6%). The difference in GDP per capita growth rates (the difference between the growth rate in 2009 and the average of growth rates from 1997 to 2007) reveals that the effect of the crisis was pronounced: -6.1 percentage points.

The crisis was mainly transmitted to El Salvador through the trade and transfer channels. Foreign assets did not play a major role in the economy: net foreign assets were only about 11.0% of GDP in 2007. During the crisis, the real value of these assets shrank slightly – by about 7.4% (2008). In 2007, investment flows contributed just 6.4% to GDP, which suggests that the 25.9% drop in inflows in 2008 did not harshly affect the economy. However, the exports share of GDP was 25.9% in 2007 so the 16.0% drop in exports in

Figure 11: General government revenue and expenditure in El Salvador



Notes: Values in constant 2009 US$, in millions

Source: IMF (2011)

10 Poverty rates are measured as poverty headcount ratio at US$ 2 a day (PPP).

2009 were surely felt at the micro-level. The transfer channel also helped transmit the crisis to El Salvador. Although in 2007, Official Development Assistance was insignificant to the economy (0.5% of GDP), that year remittances inflows contributed 18.5% to GDP and in 2009 many Salvadorans surely felt their drop by 9.4%.

The Government of El Salvador reacted to the crisis by increasing government spending (Figure 11). Because government revenue fell in the same period, the cash deficit rose from 1.3% of GDP in 2007 to 5.6% of GDP in 2009 (IMF 2011).

The Salvadoran policy response followed two main strategies: cushioning the short-term impacts on the most vulnerable populations through increased social protection and employment generation, and ensuring medium-term fiscal sustainability by strengthening public finance (World Bank 2010b).

3.2.2 Microeconomic effects

In El Salvador, all income deciles and social groups suffered severe income losses during the economic and financial crisis, with poorer households generally more deeply affected than richer households. In particular, income from labour fell dramatically for households at the lower end of income distribution, although this loss was partly offset by increasing agricultural production and social assistance income. The drop in remittances inflows contributed to overall income contraction and affected all income deciles – but mainly those households with migrating household members.[11]

The strong effect of the reduction in labour income could be understood as poorer households more often having unstable job situations because of their lower human capital or because they run small-scale businesses and thus are more vulnerable to the effects of the crisis. Indeed, households with less education and in less stable employment situations were, on average, more affected by the crisis. However, we also found that the employers group suffered an above-average reduction in monthly income, while the income of informal entrepreneurs seems to have remained more or less constant. These findings are elaborated in greater detail below.

Changes in income by deciles

Average monthly per capita income decreased from 2007 to 2009 for all income deciles. As shown in Table 3, the most pronounced contraction was felt by the three lowest income deciles. For the poorest group, the first income decile, monthly per capita income fell by as much as 17.6%. The second, third and fourth income deciles also faced above-average reductions in income, though they were less extreme than those of the poorest group. The tenth decile also faced an above-average decrease in income although this estimate is not very reliable, as shown by the size of the standard errors.

The difference in changes in income shown by income deciles is even more pronounced when only labour income, such as income from self-employment or labour market activities, is considered (Table 4). Here, too, the first income decile faced the most pronounced contraction, followed by the second decile. Labour income decreased by

11 See Annex III for variable definitions and small variations in definitions between countries.

Table 3: Change in monthly per capita income by income deciles in El Salvador

Income deciles	2007		2009		Percentage change	T-test
	Mean	std. error	Mean	std. error		
1	48.71	0.41	40.15	0.34	-17.58%	***
2	83.36	0.26	75.08	0.23	-9.93%	***
3	109.82	0.25	102.42	0.22	-6.74%	***
4	137.22	0.28	129.89	0.24	-5.35%	***
5	169.71	0.32	162.27	0.28	-4.38%	***
6	204.82	0.42	196.45	0.34	-4.08%	***
7	251.32	0.53	241.62	0.50	-3.86%	***
8	315.59	0.78	306.73	0.83	-2.81%	***
9	427.50	1.79	419.74	1.61	-1.82%	***
10	1027.54	54.64	969.71	32.73	-5.63%	***
Total	277.01	9.38	263.99	7.46	-4.70%	*

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: DIGESTYC (2008 / 2010)

Table 4: Change in monthly per capita income from labour by income decile in El Salvador

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	mean	std. error		
1	24.27	0.88	15.94	0.60	-34.31%	***
2	48.84	1.21	43.86	0.95	-10.20%	***
3	75.42	1.48	70.06	1.21	-7.11%	***
4	98.12	1.76	93.48	1.44	-4.74%	**
5	120.79	2.24	120.45	1.73	-0.29%	
6	156.78	2.56	154.86	2.04	-1.22%	
7	188.55	3.11	188.59	2.81	0.02%	
8	254.11	3.47	253.98	3.08	-0.05%	
9	351.40	4.70	358.01	4.29	1.88%	
10	901.47	53.66	869.63	35.09	-3.53%	
Total	221.44	8.91	216.48	7.20	-2.24%	

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: DIGESTYC (2008 / 2010)

34.3% and 10.2% in the first and second deciles, respectively. Statistically significant differences in mean income were also found for the third and fourth income deciles, whereas changes in labour income for groups at the upper end of the income distribution were not statistically significantly different from zero.

It was possible to partially offset losses in labour income by increasing activity in agricultural production, although the changes were only statistically significant for the first income decile. In that group, income from agricultural production rose by 29.8% (not reported here).

Table 5: Change in monthly per capita income from remittances by income decile in El Salvador

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	mean	std. error		
1	3.73	0.38	2.69	0.22	-27.78%	**
2	10.77	0.79	8.35	0.53	-22.42%	**
3	10.81	0.80	9.94	0.68	-8.07%	
4	16.20	1.08	15.10	0.97	-6.75%	
5	23.67	1.71	18.84	1.20	-20.40%	**
6	22.61	1.70	18.68	1.32	-17.37%	**
7	33.15	2.32	24.32	1.75	-26.63%	***
8	31.66	2.28	24.71	2.02	-21.94%	***
9	42.45	3.43	35.57	2.81	-16.21%	*
10	63.41	5.45	48.48	8.28	-23.55%	**
Total	25.84	0.85	20.66	0.99	-20.07%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: DIGESTYC (2008 / 2010)

In addition to losses in labour income, households in all income deciles faced reductions in income from remittances (Table 5), a change that was statistically significant in all but the third and fourth deciles. The other deciles faced contractions between 16.2% and 27.8%. Because the share of income from remittances to overall income was high for all deciles, reduced remittances were one of the major drivers of income loss in El Salvador during the crisis.

Between 2007 and 2009, total income from social assistance increased because of the expansion of the conditional cash transfer programme during the crisis (Table 6).[12] The lowest income deciles in particular seem to have benefited from the scaling up of social assistance during the crisis, but the targeting seems not to have been very exact. In some deciles, income from social assistance increased, whereas in others, it decreased: the increase was not just found at the lower end of the income distribution, nor were contractions in income from social assistance confined to the higher income groups. Table 6 shows that income from social assistance increased by as much as 171.4% for the fourth decile, whereas it decreased by 14.9% for the fifth. This might suggest imprecise targeting, but measurement error cannot be excluded as a possible explanation. In 2007, mean income from social assistance was very low for the fourth, as compared with the third and fifth, deciles.

Poorer households in El Salvador were differently affected by the global economic and financial crisis than richer households. This becomes clear when comparing income structures for the lowest and the highest income deciles before and after the crisis (Figures 12 and 13). In the lowest income decile, agricultural production contributed a considerable share to total income. As described above, during the crisis the share of agricultural

12 El Salvador formulated an anti-crisis plan in early 2009 that included expanding the existing conditional cash transfer scheme and creating a public works scheme. This plan was supported by the World Bank, which increased its lending to El Salvador in 2009 by 41.2% (World Bank 2012).

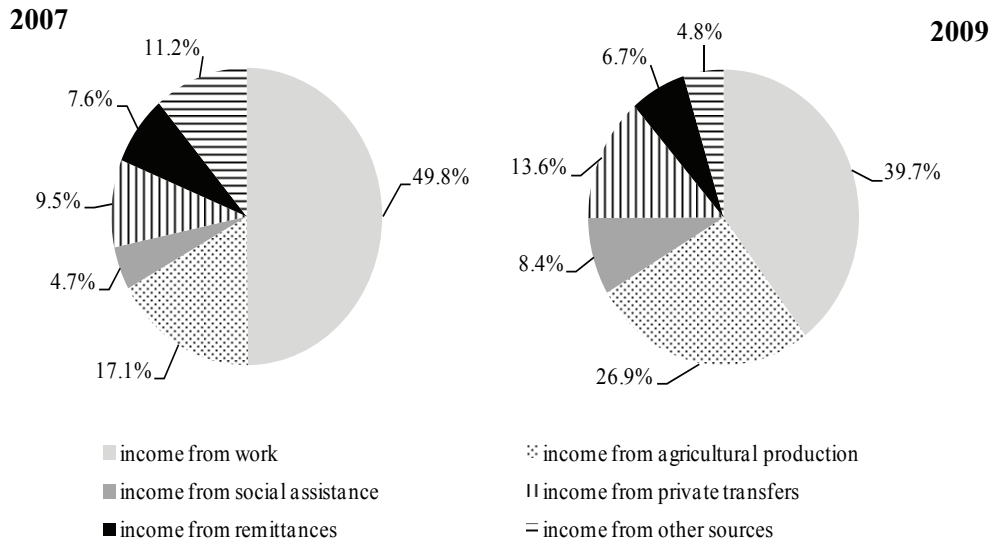
Table 6: Change in monthly per capita income from social assistance by income decile in El Salvador

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	mean	std. error		
1	2.30	0.31	3.35	0.28	45.82%	***
2	1.59	0.29	2.54	0.28	59.37%	***
3	2.00	0.40	2.53	0.42	26.71%	
4	0.72	0.13	1.95	0.29	171.44%	***
5	1.27	0.56	1.08	0.18	-14.89%	
6	1.02	0.19	1.37	0.29	34.31%	
7	0.97	0.20	1.82	0.95	87.79%	**
8	1.47	0.30	1.58	0.33	7.50%	
9	1.78	0.30	1.72	0.23	-3.32%	
10	1.66	0.29	2.77	0.45	66.63%	***
Total	1.48	0.13	2.07	0.15	40.25%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: DIGESTYC (2008 / 2010)

Figure 12: Income composition of the lowest income decile in El Salvador

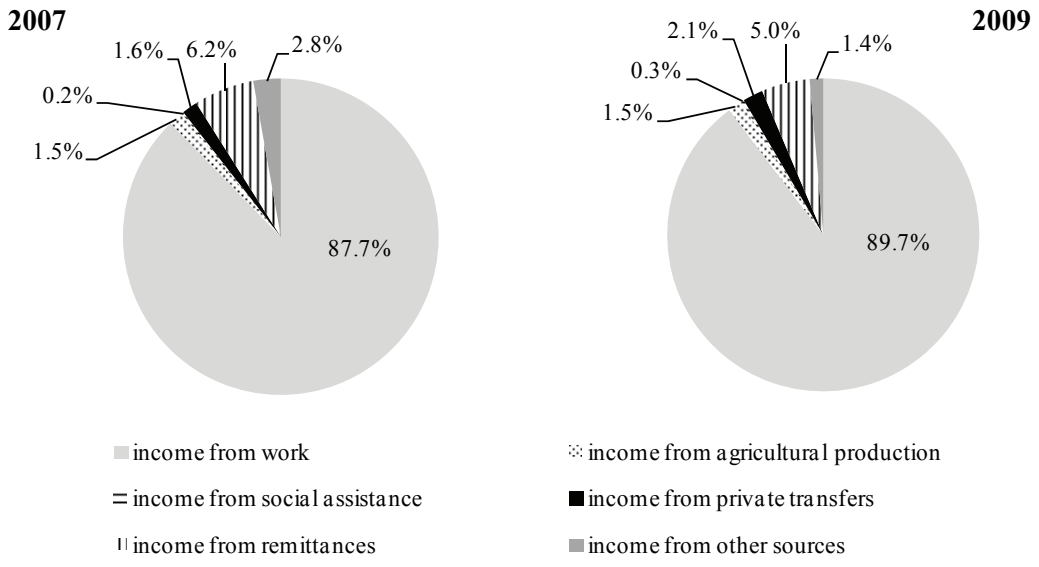


Notes: Shares of income from different sources in overall income

Source: DIGESTYC (2008 / 2010)

production in total income increased, partly due to increased production and partly from the decline in income from other sources, especially labour. Figure 12 also shows that the share of social assistance in overall income increased from 4.7% in 2007 to 8.4% in 2009 while the share of private transfers in overall income increased from 9.5% to 13.6%. In absolute terms, income from private transfers and social assistance increased from US$ 4.7 to US$ 5.4 and from US$ 2.3 to US$ 3.4 respectively.

Figure 13: Income composition of the highest income decile in El Salvador



Notes: Shares of income from different sources in overall income

Source: DIGESTYC (2008 / 2010)

In the highest income decile, the share of labour income in total income actually increased during the crisis. However, this should not be interpreted as an absolute increase in labour income for this group, but rather in conjunction with the sharper decline in income from all other sources. For example, the share of remittances in overall income shrank from 6.2% to 5.0% between 2007 and 2009, which in real terms is associated with a decrease in monthly per capita income from US$ 63.4 to US$ 48.5.

Changes in income by socio-demographic characteristics

In El Salvador, socio-demographic characteristics seem to have driven some of the micro-economic effects of the crisis. Table 7 gives an overview of the changes in monthly per capita income by socio-demographic characteristics.

Households headed by working-age women were, on average, more deeply affected by the economic and financial crisis than others. The change in income for male-headed households was much smaller than for female-headed households. Also, households whose heads were of pension age appear to have suffered no income losses during the crisis, while households with younger heads suffered contractions of about 5%. This could be because pensions remained constant during the crisis, whereas labour income generally decreased.

Households whose main income provider had no basic education experienced stronger income contractions than households whose head had some higher education, a finding that concurs with the literature. Although households with a university degree also appear to have suffered income losses of around 4%, this finding is not statistically significant because of the large standard errors.

The crisis in El Salvador most severely impacted employers. However, the large standard errors make it difficult to assess the reliability of this finding. Nevertheless, the huge difference between employers and self-employed workers is striking. It would be interesting to analyse this subgroup more thoroughly.

Table 7: Change in monthly per capita income by socio-demographic characteristics in El Salvador

	2007		2009		Percentage change	T-test
	mean	std. error	mean	std. error		
Demographics of household head						
male	286.46	12.05	280.56	9.88	-2.06%	
female	259.63	8.79	232.47	4.92	-10.46%	***
under 30	281.46	13.40	268.63	10.11	-4.56%	
30–44	290.19	12.90	273.66	10.07	-5.70%	*
45–64	298.87	14.24	282.55	11.23	-5.46%	*
over 65	209.80	6.43	207.95	7.82	-0.88%	
Education level of main income provider						
no diploma	191.50	3.72	177.35	2.37	-7.39%	***
basic education	240.34	5.68	239.15	9.24	-0.49%	
secondary education	336.06	8.98	328.27	9.62	-2.32%	
tertiary education	695.36	56.68	665.77	32.83	-4.25%	
Employment of main income provider						
Employer	510.32	44.34	424.67	28.59	-16.78%	**
self-employed	219.27	5.49	216.23	5.73	-1.39%	
employed with work contract	432.42	27.25	428.25	16.99	-0.96%	
employed without work contract	214.15	6.44	204.05	6.77	-4.72%	*
no access to social security	217.75	3.90	207.11	3.77	-4.89%	**
with access to social security	432.61	25.28	417.11	18.38	-3.58%	
Household reliance on transfers						
no migrating household member	267.43	8.88	258.98	7.15	-3.16%	*
with migrating household member	317.17	18.22	290.84	15.24	-8.30%	*
no social assistance	276.28	9.77	271.81	7.69	-1.62%	
with social assistance	288.10	23.46	201.68	12.27	-30.00%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: DIGESTYC (2008 / 2010)

Within the employed population, those with no work contracts and no access to social security seem to have suffered more than others during the crisis. Income for households whose main income provider was employed with a contract changed by only -0.96%, a difference that is not statistically significantly different from zero. In contrast, income in households whose main income provider was employed without a contract fell by 4.72%; the difference is significant at the 5% level.

Finally, household reliance on transfers seems to explain some variation in the micro-level effects of the crisis. Households with migrating household members suffered more pronounced declines in monthly income (Table 7). This finding is in line with the results above. Households with access to social assistance in the form of pensions or cash transfers faced an average decrease in monthly income of about 30.0%. However, access to social assistance was not constant over time and during the crisis, the share of households

who received transfers increased from 6.2% to 11.2% of the population, as a result of scaled up social spending in 2008 and 2009. The reduction in average income for households with access to social assistance is therefore a sign of the efficient targeting of additional funds. In fact, as shown earlier, the share of social assistance in overall income for the lowest income decile increased from 4.7% to 8.4%, which corresponds to an average increase from US$ 2.3 to US$ 3.4 per capita (in international PPP). Unfortunately, these additional transfers could not fully compensate for losses in income from other sources.

In El Salvador, lower-income households were more severely affected than others by the economic and financial crisis. And it appears that poorer households suffered from the crisis irrespective of their social characteristics: there is much less variation across categories for the poorest 30% of the population than for the whole sample. Table 8 shows income trends for the lowest three income deciles disaggregated by socio-demographic characteristics. The results are discussed in more detail below.

Demographics do not seem to have determined the differences in microeconomic effects of the crisis within the poorest 30% of the population. In the lowest three deciles, female-headed households did not suffer greater declines in income than male-headed households: both groups faced income contractions of similar magnitudes. For the lowest three deciles, households with pension-age and working-age heads were similarly affected by the financial crisis.

As for the whole population, less-educated households within the poorest three deciles were most affected by the crisis. However, differences here were less pronounced than for the whole sample. In contrast to the population average, households whose principle income provider had completed secondary education suffered an above-average loss of income.

Employment status seems to explain many of the differences in crisis impact at the micro-level. On average, households with main income providers who were self-employed suffered more severe income losses than households whose main income providers were employed. Income loss was greatest for employers (e.g. entrepreneurs who use hired labour), who suffered income losses of about 19.4% on average (Table 8). Informal entrepreneurs faced income contractions of about 12.0%. In comparison, the income losses of approximately 5.0% for employees without work contracts and 6.3% for employees with work contracts seem quite modest. Unlike what was observed for the whole sample, households with stable jobs – characterised by access to social security and employment contracts – faced higher income losses than households with unstable job situations. The differences, however, were slight.

Finally, household reliance on transfers accounted for fewer microeconomic effects of the crisis among the poorer parts of the population than in the whole sample: There was virtually no difference in the change of income for households with, and without, migrating household members. In addition, the difference in income changes for households with access to social assistance and households without social assistance was much smaller for the poorest than for the whole group (-13.1%, compared with -8.9%). This is especially surprising in view of the fact that the share of households who received social assistance increased from 7.6% in 2007 to 18.6% (of the poorest 30% of the population) in 2009, an increase that is much greater than for the population as a whole. It seems reasonable to conclude that during the global economic and financial crisis, increased social spending at least partly helped to cushion the effects of the crisis on the poorest people of El Salvador.

Table 8: Change in monthly income per capita by socio-demographic characteristics of the poorest 30% of the population in El Salvador

	2007		2009		Percentage change	T-test
	Mean	std. error	Mean	std. error		
Demographics of household head						
male	79.37	0.71	70.64	0.59	-11.00%	***
female	82.63	0.84	74.60	0.73	-9.73%	***
under 30	81.63	1.57	76.15	1.11	-6.71%	***
30-44	82.03	0.92	73.86	0.75	-9.96%	***
45-64	81.35	0.93	70.56	0.83	-13.27%	***
over 65	76.51	1.09	69.23	0.85	-9.51%	***
Education of main income provider						
no diploma	78.34	0.62	69.65	0.52	-11.09%	***
basic education	85.58	1.53	80.17	1.27	-6.33%	***
secondary education	94.56	1.43	82.69	1.50	-12.55%	***
tertiary education	86.59	4.20	86.22	5.61	-0.43%	
Employment of main income provider						
employer	74.78	2.08	60.24	1.89	-19.44%	***
self-employed	77.87	1.10	68.51	0.87	-12.03%	***
employed with work contract	96.83	1.62	90.77	1.20	-6.26%	***
employed without work contract	82.82	0.89	78.60	0.64	-5.09%	***
no access to social security	79.48	0.69	72.29	0.58	-9.05%	***
with access to social security	96.52	1.24	89.20	0.98	-7.58%	***
Household reliance on transfers						
no migrating household member	79.74	0.63	71.37	0.53	-10.49%	***
with migrating household member	84.75	1.15	76.13	1.00	-10.17%	***
no social assistance	81.00	0.59	73.81	0.51	-8.88%	***
with social assistance	73.62	2.19	63.95	1.18	-13.13%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: DIGESTYC (2008 / 2010)

3.3 Tajikistan

Tajikistan is a low income country in Central Asia, where in 2007 the poverty headcount ratio (US$ 2 a day in PPP) was about 37.0% (World Bank 2012). The economy relies heavily on a few export products as well as on remittances inflows, a structure that made the country vulnerable to the 2007 food price crisis as well as to the economic and financial crisis of 2008 and 2009.

Tajikistan was strongly affected by the economic and financial crisis – not only through reduced investment and remittances inflows, but also through the depreciation of foreign assets. These effects deeply impacted at the micro-level, but seem to have affected macroeconomic performance to only a limited extent. Positive GDP per capita growth rates ob-

served at the macroeconomic level were in sharp contrast to strong income contractions at the household level.[13] Sections 3.3.1 and 3.3.1 describe the macro- and microeconomic effects of the crisis in Tajikistan.

3.3.1 Macroeconomic effects and policy responses

Tajikistan is the only country analysed here that continued to experience positive growth rates during the crisis. The GDP per capita growth did not decelerate until 2010, and even then it remained positive, at 2.4%. During the crisis, GDP per capita grew by 6.4%. The difference in GDP per capita growth rates[14] was also positive, albeit minimal. Nevertheless, we included Tajikistan in our analysis because it was affected by the crisis through reductions in investment and remittances inflows.

The remittances and investment channels were the main channels through which the global crisis was transmitted to Tajikistan. While net foreign assets fell by 72.4% in 2008, their small share of the 2007 GDP (5.4%) makes it unlikely that this large drop had major repercussions at the micro-level. Investment inflows had a bigger role in the overall economy, contributing 9.7% to GDP. While the amount of investment inflows continued to grow positively throughout 2008, in 2009, it nearly halved. Exports contributed 20.6% to the 2007 GDP and continued to grow at positive rates in 2008 and 2009. ODA – 6.1% of GDP in 2007 – also continued to increase throughout the crisis. Remittances seem to have been the most important channel through which the economy was affected by the economic and financial crisis. The share of remittances in GDP was put at 45.5% in 2007, and although remittances grew at positive rates in 2008, in 2009, they fell by 31.2%. It is expected that mostly the higher income groups would have felt the sharp drop in net foreign assets, while the reduction of remittances inflows may have affected almost all groups.

Tajikistan's fiscal deficit had been increasing since 2007 in light of the global crisis and peaked at 5.2% of GDP in 2009. As we can see in Figure 14, it has been preceded by a long period of quasi balanced budget.

In response to the crisis, Tajikistan cut the corporate income tax to stimulate investment (Brownbridge / Canagarajah 2009). The country also revised spending priorities along three main principles: first, social spending would be increased to maintain the delivery of key public services; second, social spending would be prioritised for the most vulnerable groups; and third, unnecessary and low priority expenditures should be scaled back (World Bank 2010c).

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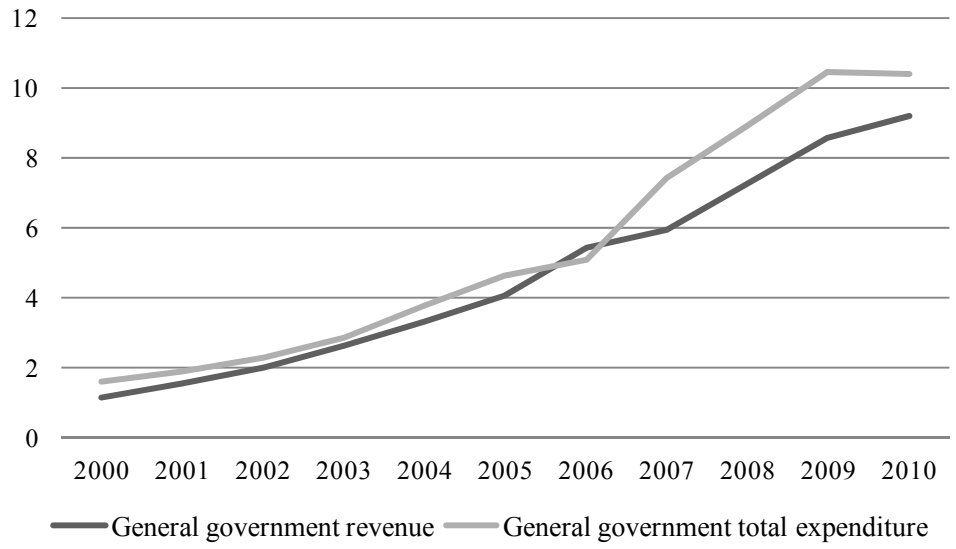
13 This contrast is not easy to explain. It could be due to the direct effect of remittances on household income that became visible earlier at the micro- than at the macro-level. However, data quality could be a problem. The Tajikistan LSMS has a very small sample size (especially in 2009) and despite being designed to ensure national representativeness, in such small samples even minor errors in sampling and weighting can lead to biased estimates.

14 The difference in GDP per capita growth rates is the difference between the growth rate in 2009 and the average growth rate from 1997 to 2007.

Figure 14: General government revenue and expenditure in Tajikistan



Notes: Values in constant 1997 Tajik Somoni, in millions

Source: IMF (2011)

3.3.2 Microeconomic effects

Although GDP per capita growth in Tajikistan remained positive throughout the economic and financial crisis, household-level data suggest strong welfare losses for all income deciles, with wealthier parts of the population more strongly affected by the financial crisis than poorer households. Drops in labour and remittances income caused strong income losses for wealthier households. Lower income deciles in Tajikistan were also strongly affected by the crisis – although mainly as a result of reduced social spending and reductions in private transfers and remittances. Apparently, the transfer channel was relevant for all parts of the population, whereas contractions in labour income affected mainly the wealthier households.

As for the role of social characteristics, households with older heads and household heads with less education tended to be more strongly affected by the crisis. In addition, entrepreneurs with and without hired labour were slightly more affected than employees. Within the population that was employed, income contractions were similar for formal and informal workers. During the crisis, the share of households in formal employment decreased while the share of households with jobs in the informal sector increased (where wage levels are lower). This suggests that many households experienced deteriorating working conditions and reduced income through switching from the formal to the informal sector. These findings are elaborated below.

Changes in income by deciles

In Tajikistan, all income deciles faced strong contractions in income, which is very surprising since during the crisis, GDP per capita continued to grow at positive rates. It is difficult to detect which groups were most affected, because all changes were of similar magnitudes. It seems that the richer groups – if any – faced higher income contractions (Table 9).

Table 9: Change in monthly per capita income by income deciles in Tajikistan

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	mean	std. error		
1	27.08	0.73	15.25	0.64	-43.70%	***
2	72.57	0.71	32.47	0.39	-55.25%	***
3	113.33	0.63	46.08	0.36	-59.34%	***
4	154.93	0.59	59.23	0.37	-61.77%	***
5	201.75	0.69	74.40	0.52	-63.12%	***
6	256.02	0.89	93.06	0.59	-63.65%	***
7	322.13	1.27	119.50	0.88	-62.90%	***
8	429.21	1.94	156.21	1.30	-63.60%	***
9	628.36	4.73	217.63	2.18	-65.37%	***
10	1565.92	69.61	435.00	17.73	-72.22%	***
Total	377.01	12.83	124.67	4.06	-66.93%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: World Bank / Tajstat (2008 / 2010)

Table 10: Change in monthly per capita income from labour by income deciles in Tajikistan

Income deciles	2007		2009		Percentage change	T-test
	Mean	std. error	mean	std. error		
1	7.98	0.93	6.71	0.72	-15.93%	
2	31.12	1.76	18.06	1.11	-41.98%	***
3	61.98	2.90	24.93	1.53	-59.77%	***
4	90.08	3.62	30.94	1.75	-65.65%	***
5	121.55	3.82	38.98	2.43	-67.93%	***
6	166.45	4.70	46.28	3.14	-72.19%	***
7	204.21	6.11	63.41	3.46	-68.95%	***
8	251.73	9.06	72.60	4.83	-71.16%	***
9	350.57	12.84	91.25	6.97	-73.97%	***
10	699.55	65.85	179.72	15.07	-74.31%	***
Total	198.47	8.81	57.19	2.48	-71.18%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: World Bank / Tajstat (2008 / 2010)

Differences in income changes between the deciles were most pronounced for labour income (Table 10). The first decile suffered the least change (the only change that is not statistically significant) in income from labour market activities and self-employed businesses. All other deciles experienced large contractions in labour income, whereby the size of this effect appeared to increase with income.

For most other income sources, large and statistically significant declines were found over all deciles (not reported here). Income from remittances decreased drastically for all

Table 11: Change in monthly per capita income from social assistance by income deciles in Tajikistan

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	Mean	std. error		
1	5.11	0.50	2.34	0.38	-54.12%	***
2	7.88	0.81	3.25	0.54	-58.74%	***
3	7.89	0.93	5.40	0.83	-31.57%	*
4	10.06	1.13	5.62	0.86	-44.16%	***
5	10.78	1.43	6.48	1.27	-39.93%	**
6	9.94	1.07	7.56	1.26	-23.90%	
7	13.19	1.29	5.53	0.97	-58.05%	***
8	16.32	2.35	8.36	1.86	-48.75%	**
9	15.37	1.80	11.18	2.23	-27.25%	
10	15.20	1.88	9.35	2.75	-38.53%	*
Total	11.17	0.57	6.50	0.50	-41.78%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: World Bank / Tajstat (2008 / 2010)

deciles and income from agricultural production also. Unlike in El Salvador, it was not possible to compensate for losses in income from remittances and labour market activities.

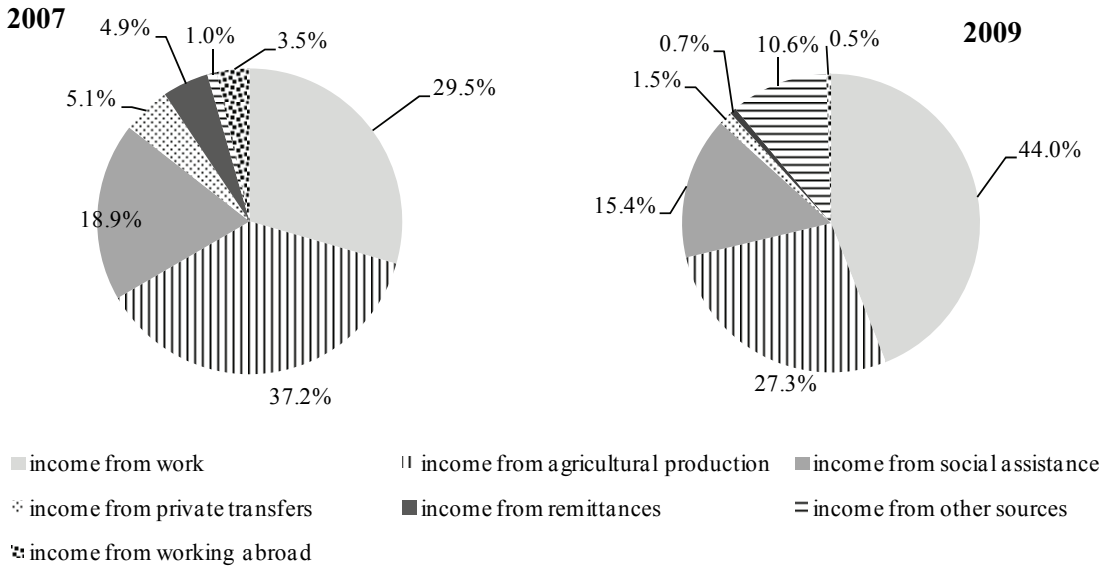
Income from social assistance also decreased, with the contraction apparently most pronounced for the poorer parts of the population. Table 11 shows that the first two deciles faced an above-average contraction in income from social assistance, as did the fourth, seventh and eighth deciles. Although the trend is unclear, it appears that in Tajikistan cuts in public spending most affected the most vulnerable groups.

As in El Salvador, the crisis in Tajikistan affected poorer households differently from wealthier households. This becomes apparent when income structures for the lowest and the highest income deciles before and after the crisis are compared (Figures 15 and 16). In Tajikistan, the poorest income decile was more affected through decreasing remittances and private transfers than through the labour market. The share of labour income in total income increased from 29.5% in 2007 to 44% in 2009, although in real terms it contracted. At the same time, income from the remaining sources decreased disproportionally. Respectively, the shares of income from remittances and from private transfers decreased from 4.9% in 2007 to 0.7% in 2009, and from 5.1 in 2007 to 1.5% in 2009. In the same period, the share of agricultural production and social assistance also decreased, from 37.2% to 27.3% and from 18.9% to 15.4% respectively. Finally, the share in income from other sources greatly increased – from 1% to 10.6% – whereas labour income obtained through seasonal migration (income from working abroad) remained negligible in 2007 and 2009.

At the higher end of the income distribution, the effects of the crisis were mainly felt through drastic reductions in income from remittances, but also by losses in labour income. While the share of labour income in total income remained fairly constant, in real terms it contracted by 74.3%. Remittances dropped for the highest income decile, reducing their share in total income from 32.5% in 2007 to 19% in 2009. However, richer house-

holds seem to have offset losses in remittances by continuing to migrate: the share of income from working abroad increased from 6.6% in 2007 to 24.3% in 2009, although in real terms it increased only slightly – from US$ 103.5 to US$ 105.7 (PPP). Agricultural production seems to have played only a minor role in household income, with its share dropping from 9.8% to 3.2% of the total monthly income.

Figure 15: Income composition of the lowest income decile in Tajikistan



Notes: Shares of income from different sources in overall income

Source: World Bank / Tajstat (2008 / 2010)

Figure 16: Income composition of the highest income decile in Tajikistan

Notes: Shares of income from different sources in overall income

Source: World Bank / Tajstat (2008 / 2010)

Changes in income by socio-demographic characteristics

In Tajikistan, household socio-demographic characteristics did not account for many microeconomic effects of the crisis. All groups faced statistically significant income reductions of similar magnitudes. Table 12 gives an overview of the changes in monthly per capita income by socio-demographic characteristics.

In Tajikistan, household demographics seemed to drive only a few of the microeconomic effects of the crisis. While the household head's sex appears not to have influenced the degree to which a household suffered income contractions between 2007 and 2009, their age might well have been significant. On average, households headed by persons under the age of 30 suffered lower contractions in income, while contractions were especially pronounced for those headed by persons of pension age (Table 12).

Table 12: Change in monthly per capita income by socio-demographic characteristics in Tajikistan

	2007		2009		Percentage change	T-test
	mean	std. error	mean	std. error		
Demographics of household head						
male	377.16	14.18	122.74	4.06	-67.46%	***
female	376.39	30.04	133.75	11.81	-64.46%	***
under 30	396.85	61.67	202.18	39.00	-49.05%	**
30–44	380.39	21.08	123.18	7.85	-67.62%	***
45–64	381.23	15.95	130.07	5.64	-65.88%	***
over 65	357.44	21.67	105.48	6.40	-70.49%	***
Education of main income provider						
no diploma	247.70	27.76	96.83	15.35	-60.91%	***
basic education	331.84	29.81	108.21	10.43	-67.39%	***
secondary education	392.50	15.53	119.90	4.59	-69.45%	***
tertiary education	380.16	20.20	154.64	10.74	-59.32%	***
Employment of main income provider						
employer	391.02	36.48	115.31	23.50	-70.51%	***
self-employed	487.00	42.73	129.16	9.52	-73.48%	***
employed with work contract	398.78	18.93	135.48	7.06	-66.03%	***
employed without work contract	380.82	17.25	116.26	5.11	-69.47%	***
entitled to sick leave	336.77	14.25	115.61	6.17	-65.67%	***
not entitled to sick leave	459.49	17.04	133.40	5.20	-70.97%	***
Household reliance on transfers						
no migrating household member	324.44	12.05	110.61	4.01	-65.91%	***
with migrating household member	693.60	47.93	223.48	13.56	-67.78%	***
no social assistance	392.12	14.00	128.80	5.31	-67.15%	***
with social assistance	356.44	17.83	119.52	5.59	-66.47%	***

Notes: Values in constant 2005 international $ (PPP)
*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Source: World Bank / Tajstat (2008 / 2010)

In contrast, educational background does not much explain the variations in crisis impact on households. Households whose main income provider had basic or secondary education were only slightly more affected than households whose main income provider had tertiary education or no diploma. The differences were minor. A probable explanation for the fact that households with little education suffered lower income losses would be the lower share of labour income in the total income of households at the lower end of the income distribution. However, standard errors in the lowest category are very large, so the possibility that households without any diplomas were affected as much or more than all other households cannot be excluded.

Employment status also did not explain the effects observed in Tajikistan. As in El Salvador, self-employed income providers were more affected than those who were employed. Losses in per capita income were put at about 70.5% and 73.5% for entrepreneurs with and without hired labour. For employees, the data suggest that households whose main income providers were employed with a contract and sick leave were better off than those with less stable employment. But the changes were relatively small. Due to absent information about access to social security, we included the question about entitlement to sick leave in our analysis as a way of differentiating between stable and unstable employment.

Finally, a household's reliance on transfers does not determine the degree to which it was affected by the crisis. The difference in changes in income between households with and without a migrating household member was small; the large standard errors in the group of households with a migrating household member made interpreting these results difficult. Compared with the statistics in relation to migrating household members, the difference in changes in income for households with and without access to social assistance was even smaller (Table 12).

Differences in their socio-demographic characteristics do not appear to have significantly influenced the degree to which the poorest three deciles in Tajikistan were affected by the global economic and financial crisis. They all suffered comparably. There was even less variation between socio-demographic categories within the poorest 30% of the population than within the entire population. The size of the effect was similar for all groups – independent of the category (Table 13).

Education and access to social assistance seemed to help determine changes in income in the poorest three deciles. In this subsample, households whose main income provider had tertiary education faced the sharpest income declines, and households with access to social assistance fared somewhat better during the crisis than households without. The income of the former shrank by 51.9%, while it decreased by 59.3% for households without access to social assistance.

In contrast to our observations for the entire population, in the poorest deciles entrepreneurs seemed to be less affected by the economic crisis than employees. Entrepreneurs with and without hired labour had income losses of about 54.7% and 57.9% respectively, while employees with and without work contracts suffered losses of 59.3% and 60.4%. However, these results were not driven by changes in income from entrepreneurial activity, as is clear when only labour income is considered in Table 14.

Table 13: Change in monthly per capita income by socio-demographic characteristics for the poorest 30% of the population in Tajikistan

	2007		2009		Percentage change	T-test
	mean	std. error	Mean	std. error		
Demographics of household head						
male	72.04	1.53	31.13	0.88	-56.79%	***
female	67.49	2.43	31.36	1.72	-53.53%	***
under 30	63.71	5.97	28.52	6.51	-55.24%	***
30–44	69.57	2.18	30.34	1.44	-56.39%	***
45–64	73.44	1.85	31.16	1.14	-57.57%	***
over 65	69.32	2.59	32.62	1.47	-52.94%	***
Education of main income provider						
no diploma	54.92	4.07	26.64	3.31	-51.50%	***
basic education	69.23	2.77	30.51	2.03	-55.93%	***
secondary education	71.62	1.73	31.55	1.00	-55.95%	***
tertiary education	78.02	2.61	32.42	2.12	-58.44%	***
Employment of main income provider						
employer	71.25	6.29	32.24	4.79	-54.74%	***
self-employed	77.11	3.30	32.44	1.82	-57.93%	***
employed with work contract	84.45	1.74	34.39	1.17	-59.28%	***
employed without work contract	81.24	2.04	32.16	1.22	-60.41%	***
entitled to sick leave	86.18	1.78	33.12	0.93	-61.57%	***
not entitled to sick leave	87.71	2.05	32.92	1.26	-62.47%	***
Household reliance on transfers						
no migrating household member	70.56	1.40	31.08	0.80	-55.95%	***
with migrating household member	75.47	3.49	33.76	3.46	-55.27%	***
no social assistance	72.06	1.62	29.34	0.98	-59.29%	***
with social assistance	69.69	1.96	33.67	1.06	-51.68%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: World Bank / Tajstat (2008 / 2010)

Table 14: Change in monthly per capita income from labour by socio-demographic characteristics for the poorest 30% of the population in Tajikistan

Employment of main income provider	2007		2009		Percentage change	T-test
	Mean	std. error	mean	std. error		
employer	45.96	6.29	12.53	4.21	-72.73%	***
self-employed	25.04	4.59	19.93	1.91	-20.41%	
employed with work contract	54.47	2.05	22.23	1.30	-59.20%	***
employed without work contract	47.45	3.23	19.07	1.29	-59.82%	***
entitled to sick leave	58.11	2.16	19.05	1.02	-67.23%	***
not entitled to sick leave	63.52	2.33	21.61	1.37	-65.98%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: World Bank / Tajstat (2008 / 2010)

In terms of changes in labour income, the group of employers was most harshly hit. Their income decreased on average by 70%, compared to 20% for the self-employed main income providers. For households whose main income provider was employed, the size of income losses apparently was not influenced by a work contract. However, per capita incomes were higher for households whose main income provider had a work contract and the share of households in formal employment decreased during the crisis. From 2007 to 2009, the share of main income providers who were employed with work contracts dropped from 40.9% to 37.8%, while the share of employees without work contracts rose from 40.8% to 49.2%. Our findings suggest that during the crisis, a considerable share of formal employees lost their stable jobs and had to take less well paid, and less stable, jobs. It becomes clear, that main income provider's possession of a work contract did not determine the likelihood of their income shrinking during the crisis. As we can also see from Table 14, for the poorest tier of the population, entitlement to sick leave had no influence on the size of income losses either.

3.4 Cambodia

Cambodia is a low income country that had poverty rates around 60.1% in 2007, measured at the poverty line of US$ 2 a day (in PPP, World Bank 2012). Its economy relies heavily on garment and tourism exports, two sectors that suffered immensely during the global crisis (Jalilian / Reyes 2010). Indeed, Cambodia suffered the sharpest contraction in GDP per capita growth in the East Asia and Pacific Region.

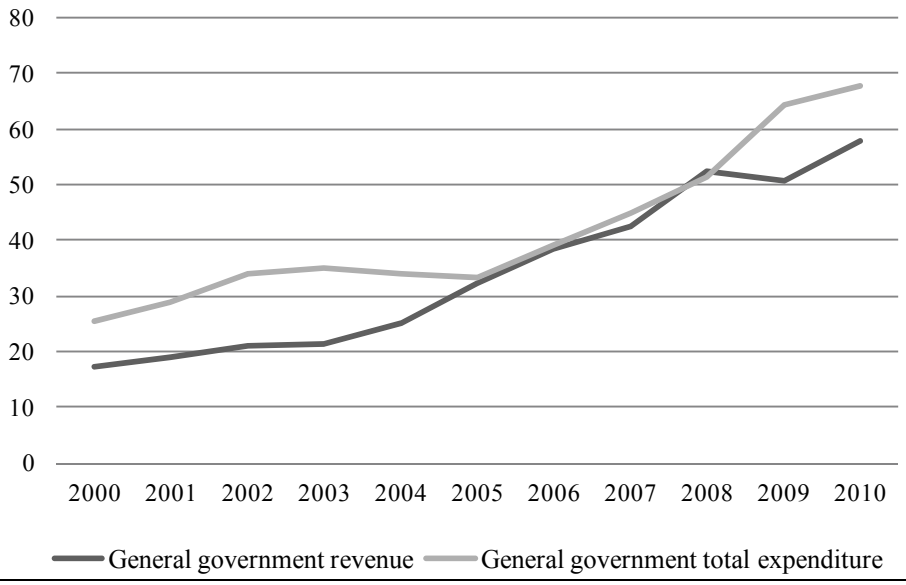
Cambodia was mainly affected by the global economic and financial crisis through the wealth, investment and trade channels. Although GDP per capita growth turned negative in 2009, the effects of the crisis seem to have only partially trickled down to the micro-level. Sections 3.4.1 and 3.4.2 provide evidence on the macro- and microeconomic effects of the crisis in Cambodia.

3.4.1 Macroeconomic effects and policy responses

In the 2000s, Cambodia had experienced pronounced per capita GDP growth at rates between 5.1% and 11.9%. But in 2008, GDP per capita growth decelerated and in 2009 turned negative – at -1.03% (World Bank 2012). The difference in GDP per capita growth rates was even more pronounced, with a gap of -8.3 percentage points.

The main channels through which the crisis was transmitted to Cambodia were the wealth, investment and trade channels. The share of net foreign assets in GDP was relatively high for a low income country (30.1% in 2007). In 2008, the value of these assets fell by 14.3%, while capital flows, which had a 10.0% share of GDP in 2007, fell by 8.9% in 2008 and by 34.5% in 2009. Cambodia is also a trade dependent economy: in 2007 exports contributed about 65.3% to GDP. Despite continuing to grow in 2008, exports fell by 9.9% in 2009. Transfers did not play an important role in the transmission of the crisis to Cambodia. Remittances inflows contributed only 4.1% to GDP in 2007, and while they fell by 7.8% in 2008, they recovered in 2009. Although ODA was relatively high in 2007 (8.2% of GDP), it did not change much during the crisis.

Figure 17: General government revenue and expenditure in Cambodia



Notes: Values in constant 2006 billion Cambodian Riels

Source: IMF (2011)

Like most Southeast Asian countries, Cambodia reacted to the economic downturn through its fiscal policy, which included tax exemptions and corporate income tax incentives on the revenue side, and investment in infrastructure and safety nets as well as support for strategic industries and increases in civil service wages on the expenditure side (Parulian 2009). Figure 17 shows that government revenue decreased in 2009, while government expenditure continued to grow. Following three years of fiscal consolidation, the government allowed its budget deficit to expand in 2009 in order to provide fiscal stimulus.

3.4.2 Microeconomic effects

As of 2009, the effects of the economic and financial crisis seem to have only partially reduced household income in Cambodia. After 2007, average income increased in all income deciles, although our analysis found a decline in labour income for poorer households. Nonetheless, total monthly income continued to grow even in lower income groups that were able to compensate losses in labour income by increasing agricultural production and boosting income from private transfers.

Regarding social characteristics, in contrast to Tajikistan and El Salvador, Cambodian households with tertiary education performed the worst during the crisis. Income from remittances was relevant for only a very small fraction of the population, although we found that households relying on transfers – in the form of remittances and social assistance – performed worse during the crisis than those that did not.

Changes in income by deciles

Household per capita monthly income increased in Cambodia between 2007 and 2009. As reported in Table 15, the greatest increase in monthly income was in the lowest income decile (16.9%). All deciles but the tenth faced increases of similar magnitudes – around 10% to 11%. Very large standard errors make reliable statements for the tenth decile impossible.

Table 15: Change in monthly per capita income by income deciles in Cambodia

Income deciles	2007		2009		Percentage change	T-test
	Mean	std. error	Mean	std. error		
1	6.15	0.21	7.19	0.11	16.86%	***
2	14.46	0.15	16.08	0.07	11.21%	***
3	22.08	0.15	24.43	0.08	10.64%	***
4	30.71	0.17	34.28	0.09	11.62%	***
5	40.79	0.21	45.55	0.11	11.69%	***
6	53.46	0.28	58.62	0.13	9.64%	***
7	67.90	0.30	75.36	0.16	10.99%	***
8	88.68	0.51	99.11	0.26	11.76%	***
9	128.20	1.02	142.29	0.53	11.00%	***
10	438.06	35.43	886.89	235.02	102.46%	*
Total	88.95	4.72	138.98	23.82	56.24%	*

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: National Institute of Statistics (2008 / 2010)

The situation appears more complex when we look at different sources of income. Table 16 shows that for lower income deciles labour income decreased, but stayed more or less constant for the middle deciles and increased for the higher income deciles. Changes are only statistically significant for the fifth, seventh, eighth and ninth deciles. Especially in the lowest two deciles, large standard errors prevent interpretation of the results. However, the trend from large negative to large positive effects is remarkable.

Households at the lower end of the income distribution seem to have been able to compensate for losses in labour income through additional income sources. In particular increased agricultural production and private transfers compensated for these losses and explain why even the lower income groups faced an average increase in monthly per capita income during the crisis (not reported here). Income from remittances also increased considerably from 2007 to 2009 but none of the effects was found to be statistically significant nor was there any clear evidence about which groups were the most affected by these changes.[15]

Changes in income from social assistance varied considerably between income groups (Table 17), but without either a clear trend or many statistically significant changes. Income from this source was negligible in all income deciles except for the tenth, which indicates that Cambodia had very limited publicly provided social protection, with only a few small and regionally limited transfer programmes, and mostly private pension schemes.

The change in income composition of the poorest decile during the crisis explains why poorer households were scarcely affected by the financial crisis: before the crisis erupted, labour income played a relatively small role in overall income, and income from remittances

15 Detailed results are not reported here, but are available upon request.

Table 16: Change in monthly per capita income from labour by income deciles in Cambodia

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	Mean	std. error		
1	0.82	0.17	0.75	0.07	-9.55%	
2	3.01	0.38	2.52	0.17	-16.52%	
3	6.96	0.66	6.87	0.33	-1.26%	
4	12.45	0.91	13.37	0.50	7.43%	
5	20.28	1.28	22.69	0.66	11.88%	*
6	31.67	1.48	33.72	0.83	6.44%	
7	37.25	2.56	47.70	0.99	28.06%	***
8	56.96	2.64	66.15	1.34	16.13%	***
9	86.73	5.03	100.26	2.09	15.60%	***
10	340.05	36.68	509.41	98.57	49.80%	
Total	59.55	4.43	80.34	10.18	34.92%	*

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: National Institute of Statistics (2008 / 2010)

Table 17: Change in monthly per capita income from social assistance by income deciles in Cambodia

Income deciles	2007		2009		Percentage change	T-test
	mean	std. error	Mean	std. error		
1	0.05	0.02	0.04	0.01	-29.76%	
2	0.07	0.05	0.12	0.03	67.44%	
3	0.05	0.03	0.18	0.04	281.97%	**
4	0.22	0.12	0.21	0.06	-4.12%	
5	0.10	0.05	0.23	0.05	133.39%	*
6	0.29	0.11	0.55	0.11	91.62%	
7	0.29	0.17	0.28	0.07	-4.73%	
8	0.45	0.21	0.47	0.09	5.14%	
9	0.61	0.20	0.95	0.21	55.38%	
10	2.62	1.01	1.86	0.55	-29.07%	
Total	0.47	0.11	0.49	0.07	2.92%	

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

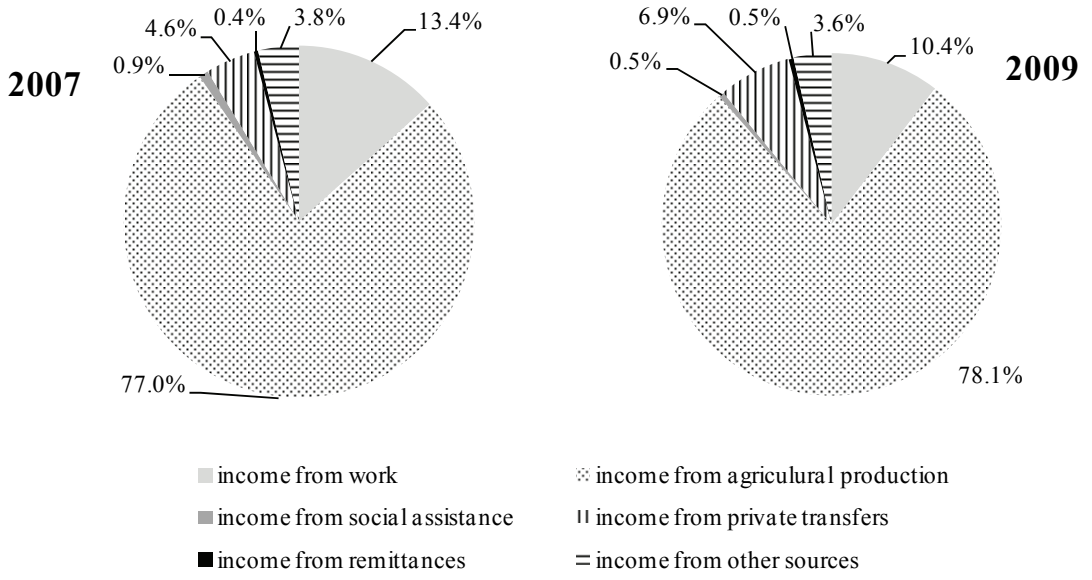
Source: National Institute of Statistics (2008 / 2010)

was negligible (Figure 18). Agricultural production contributed the lion's share to household income in 2007 and 2009, and its share in total income remained more or less constant.

The income composition of the highest income decile changed considerably between 2007 and 2009, suggesting that income from agricultural production also increased

disproportionally for households at the higher end of the income distribution. However, these changes are not representative for other higher income deciles: income composition for the seventh, eighth and ninth income deciles remained fairly constant.

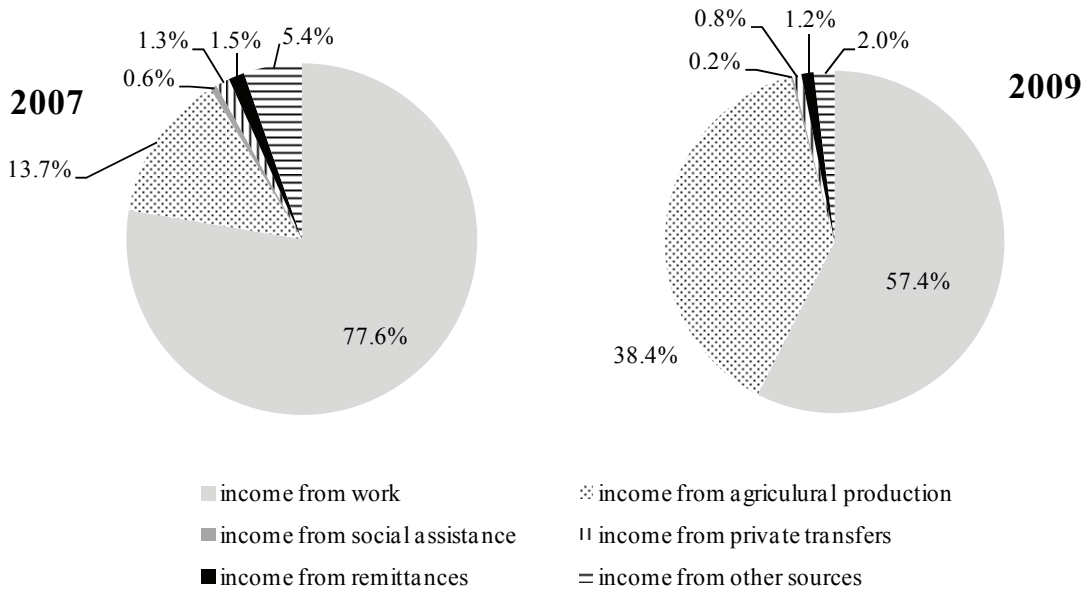
Figure 18: Income composition for the lowest income decile in Cambodia



Notes: Share of income from different sources in total per capita income

Source: National Institute of Statistics (2008 / 2010)

Figure 19: Income composition for the highest income decile in Cambodia



Notes: Share of income from different sources in total per capita income

Source: National Institute of Statistics (2008 / 2010)

Changes in income by socio-demographic characteristics

Socio-demographic characteristics in Cambodia seem to explain some of the variation in the crisis impact on households. Table 18 provides an overview of the changes in monthly per capita income by socio-demographic characteristics.

Head of household demographics explain only some of the changes in household income during the crisis. Although from 2007 to 2009 income increases were larger for male-headed households and for households with heads between 30 and 44 and of pension age, the standard errors are too large to allow for comparing results between categories. No conclusions can be drawn.

Interestingly, it appears that on average, households with better-educated heads had smaller income increases. Not counting household heads without any diplomas, positive changes in household income inversely decreased with respect to the household heads' educational level, with changes close to zero for those with tertiary education. This

Table 18: Change in monthly per capita income by socio-demographic characteristics in Cambodia

	2007		2009		Percentage change	T-test
	mean	std. error	Mean	std. error		
Demographics of household head						
male	89.11	5.42	146.10	30.01	63.96%	*
female	88.40	7.70	113.05	16.09	27.88%	
under 30	71.78	5.35	97.18	17.50	35.38%	
30–44	80.93	6.03	147.63	54.78	82.42%	
45–64	105.23	9.03	140.67	26.65	33.67%	
over 65	79.59	7.42	163.33	84.92	105.21%	
Education of household head						
no diploma	81.43	6.26	125.09	31.99	53.61%	
basic education	126.82	14.56	233.74	104.28	84.31%	
secondary education	155.59	13.35	206.28	22.29	32.58%	*
tertiary education	330.71	49.65	330.91	42.38	0.06%	
Employment of household head						
employer	693.04	428.67	49.51	14.53	-92.86%	
self-employed	77.85	5.56	133.91	31.45	72.03%	
paid employee	119.34	7.33	126.14	5.55	5.70%	
unpaid family worker	75.31	12.13	147.40	28.24	95.72%	**
Household reliance on transfers						
no migrating household member	86.08	4.60	136.72	24.87	58.83%	*
with migrating household member	162.21	30.47	187.76	32.59	15.76%	
no social assistance	89.62	5.09	141.37	25.44	57.74%	*
with social assistance	81.86	7.59	104.18	8.68	27.27%	*

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: National Institute of Statistics (2008 / 2010)

suggests that the best-educated households in Cambodia were unable to improve their income between 2007 and 2009 – unlike all the other groups. Taking into account possible inaccuracies in the price data, this could mean that this group faced negative real income growth due to labour market effects of the crisis.

The role of employment status is more difficult to assess. First, standard errors for the estimates of mean income of employers are so large that the estimates cannot be reliable.

The same is true for self-employed heads and for unpaid family workers.[16] The only category for which estimates seem reasonable is the group of households whose head was a paid employee, and for that group, at 5.7% the change in income was small but positive. But there are no reliable estimates for comparisons, so no conclusions can be drawn about the role of employment status. It is, however, interesting to observe that the 2009 estimates indicate a sharp difference between the income of employers and that of all other categories. It appears that the income of employers was much lower than the income of either informal entrepreneurs or employees. The hypothesis that formal employers suffered strongly during the crisis correlates with findings from Tajikistan and El Salvador.

A household's reliance on transfers seems to help explain income changes during the crisis. Income changes were considerably smaller for households who received remittances – and were thought to have migrating household members or relatives – as well as for households who received some sort of social assistance. In addition, the share of households receiving assistance decreased slightly – from 8.6% to 6.4% of the population.

Again, it seems useful to look at trends in the lower income deciles only, where in most categories, the estimates are more precise than for the entire sample and changes in income are more often statistically significant. The results are shown in Table 19 and discussed below.

In the poorest tier of the population, male-headed households seem to have fared somewhat worse during the crisis than female-headed households, although the difference in the income changes was relatively small. On average, households with older heads seem to have experienced higher income increases.

Educational level seems to have played only a limited role in determining changes in income during the crisis. The change is statistically significant in only one category: household heads with no diploma. Although on average, households with higher education had larger income increases, the changes were not statistically significant. We cannot reject the null-hypothesis that incomes remained constant over that period.

The employment status of the household head seems to explain why some households were more strongly affected by the crisis than others. We found that households with

16 In absence of any information about work contracts, entitlement to sick leave or access to social security, the only useful distinction at hand in the Cambodia Socio-Economic Survey was whether an employee was regularly paid or an unpaid family worker.

Table 19: Change in monthly per capita income by socio-demographic characteristics for the poorest 30% of the population in Tajikistan

	2007		2009		Percentage change	T-test
	mean	std. error	Mean	std. error		
Demographics of household head						
male	14.28	0.35	15.85	0.18	10.99%	***
female	14.01	0.61	16.09	0.30	14.84%	***
under 30	15.13	0.70	15.53	0.33	2.66%	
30–44	13.53	0.42	15.57	0.25	15.12%	***
45–64	14.86	0.47	16.30	0.24	9.65%	***
over 65	13.81	0.75	16.37	0.39	18.52%	***
Education of household head						
no diploma	14.48	0.36	16.02	0.19	10.63%	***
basic education	14.08	0.83	15.79	0.54	12.11%	
secondary education	13.51	1.88	15.91	1.02	17.73%	
tertiary education	12.76	1.37	15.01	2.10	17.57%	
Employment of household head						
employer	11.70	-	6.59	1.99	-43.64%	
self-employed	13.95	0.33	15.62	0.18	11.93%	***
paid employee	16.95	0.80	19.49	0.49	14.93%	***
unpaid family worker	12.85	1.32	15.04	1.78	17.02%	
Household reliance on transfers						
no migrating household member	14.22	0.31	15.84	0.17	11.46%	***
with migrating household member	14.84	1.61	18.26	0.85	23.04%	*
no social assistance	14.24	0.31	15.83	0.17	11.12%	***
with social assistance	13.98	1.42	17.21	0.68	23.07%	***

Notes: Values in constant 2005 international $ (PPP)
*** p < 0.001, ** p < 0.01, * p < 0.05

Source: National Institute of Statistics (2008 / 2010)

self-employed heads were slightly worse off than those with employed heads of household. Because there were no observations about the category of employers, no inference can be made about this group. No inference can be made for households headed by an unpaid family worker, either. Although average income in that group increased by 17% during the crisis, the change is not statistically significant.

In contrast to the population average, poorer households with migrating household members fared better during the crisis than poorer households without migrating household members. The same was true for households with access to social assistance who seem to have performed better than households without: for the former, average income increased by 23.1% compared with 11.1% for the latter.

4 Conclusions

This paper analysed how the global economic and financial crisis affected the populations of three developing countries. In the first part, it explained that the crisis was mostly transmitted to developing countries through interruptions in trade and investment flows, while reduced remittances inflows played an important role in some countries. The paper also highlighted the relevance of countercyclical policies in offsetting some macroeconomic effects of the global crisis. The second part of the paper showed that in developing countries that were affected by the crisis, households experienced income losses mainly through labour market effects and because of reduced remittances inflows.

After the crisis erupted, many countries implemented countercyclical fiscal and/or monetary policies to boost internal demand and attract investment. While some countries tried to attract foreign investment by cutting taxes or granting tax exemptions, others increased government spending and initiated large employment programmes to provide additional income opportunities. Still other countries increased social spending. The optimal policy mix varies greatly between countries, since it is related to the transmission channels at work locally and the country's initial position in terms of fiscal space and institutional capacities.

The effectiveness of countercyclical policies must be evaluated in terms of their ability to protect vulnerable population groups from the effects of the crisis. It will always be difficult to predict which groups would be most severely affected by a crisis and which strategies would best protect them. It is even more difficult when various transmission channels function simultaneously, as during the 2008 economic and financial crisis. The results presented above indicate the difficulty in identifying ex-ante – and even ex-post – the parts of the population that were affected by the global crisis. This difficulty hinders timely government action to protect the most vulnerable groups.

Countries worldwide attempted to shield their populations from the negative consequences of the economic and financial crisis using strategies that were not always successful. While it was crucial to know whom to address, many countries also lacked the resources and/or institutional framework to reach the identified groups. Policies aiming to attract foreign investment can fail, and additional government spending can also fail to reach those who most needed help.

In most developed countries, automatic stabilisers – particularly unemployment insurance – were crucial in cushioning the effects of the economic and financial crisis on households. In developing countries, too, universal social insurance provision and especially unemployment insurance would have been the most efficient tool to protect households from unemployment. But providing universal social insurance in developing countries can be very difficult because of their large informal sectors. In addition, social insurance cannot shield households from the loss of income from remittances or the diminishing quality of employment driven by the decreased demand for labour. It appears that in developing countries, social insurance would not have been as effective in protecting households from the consequences of the global crisis as it was in developed countries.

The question remains: What can developing countries do to protect their populations from severe economic shocks such as the global economic and financial crisis?

The experiences of the three countries analysed in this paper provide important insights. While all three countries expressed willingness to increase social spending during the crisis, they had very different initial conditions. El Salvador was the only country that effectively targeted increased social spending to the most severely affected groups. Although additional spending could not fully compensate for losses in labour and remittances income, it is noteworthy that poor households received additional public support. In contrast, during the crisis, income from social assistance remained negligible in Cambodia, while in Tajikistan, the poorest deciles suffered reductions in social assistance income.

El Salvador's experience was a result of two crucial factors: first, the country had a comprehensive cash transfer scheme in place before the crisis and second, in view of the developing crisis, the government increased the number of targeted households. Neither Tajikistan nor Cambodia had functioning comprehensive cash transfers schemes prior to the crisis. Although both Cambodia and Tajikistan attempted to shield households from the effects of the global economic and financial crisis, the poorest households in these countries received no additional funds. While El Salvador used its institutional framework to deliver additional funds, the absence of pre-existing nationwide transfer schemes in Cambodia and Tajikistan made targeting difficult and led to very mixed results.

Cash transfers programmes, including public works, are effective in directing additional funds to specific groups because they can be expanded in times of crisis. Several countries, including Ethiopia and Nicaragua, took this approach. Their experience suggests that expanded transfers did help protect households from income shocks and prevented the populations from adopting adverse coping strategies, such as taking children out of school and selling productive assets. Because cash transfer and public works schemes were in place before the onset of the crisis, additional funds were delivered through these frameworks in a timely manner.

Building up cash transfers schemes in developing countries requires time: institutions must be built, and targeting and delivery mechanisms have to be created. This is why such schemes should be in place before an economic shock occurs. A good example of the importance of a pre-existing institutional framework in order to reach households in need is the Temporary Income Support Program (PATI) in El Salvador. Although it was part of the anti-crisis strategy that was formulated in early 2009, and despite the country's experience in delivering cash transfers, building this innovative public works scheme from scratch took so much time that it only began to operate in March 2011 – two years after the crisis (ILO / World Bank 2012).

The experience of the global economic and financial crisis provides strong arguments for creating comprehensive social protection schemes, including cash transfers, in low and middle income countries. For most low and middle income countries, scaling up existing cash transfer schemes seems to be the best option for protecting poor and vulnerable households from the negative consequences of economic crises. It is difficult to direct additional social spending to those most in need, however, if there are no pre-existing transfer schemes. Building up cash transfer schemes ad hoc is much more challenging than extending existing ones, although in some cases this strategy could be successful. If no transfer scheme exists, a careful assessment should be made of the kind of programme that could be built up, in light of the country's individual financial and administrative capacities.

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Annexes

Annex 1 Robustness Checks

Regression results with and without the inclusion of regional dummies												
Dep. Var.: Change in GDP per capita growth (2009 – average 1997-2007)												
	(1)			(2)			(3)			(4)		
Short-term debt (% of total external debt)	-0.124	***	(0.04)	-0.093	***	(0.04)						
Short-term debt (squared)	0.004	***	(0.00)	0.003	***	(0.00)						
Financing via int'l capital markets (% of GDP)	-0.375	**	(0.18)	-0.370	**	(0.18)						
Financing via int'l capital markets (squared)	0.018	**	(0.00)	0.018	**	(0.00)						
Private capital flows (% of GDP)							-0.118		(0.09)	-0.177	**	(0.08)
Private capital flows (squared)							0.003		(0.00)	0.005		(0.00)
GDP per capita (constant US$, in 1000)	-0.618	***	(0.21)	-0.487	*	(0.29)	-0.227	***	(0.04)	-0.163	***	(0.05)
Net foreign assets (share of GDP, log normal)							1.270	***	(0.39)	0.872	**	(0.41)
Trade (% of GDP)	-0.037	***	(0.01)	-0.032	***	(0.01)	-0.046	***	(0.00)	-0.033	***	(0.01)
Net exports (% of GDP)	0.075	***	(0.02)	0.047	*	(0.03)	0.016		(0.02)	-0.024		(0.03)
Exports to US & W. Europe (% of exports)	0.108	***	(0.04)	0.108	***	(0.04)	0.022		(0.03)	0.064	*	(0.03)
Exports to US & W. Europe (squared)	0.000		(0.00)	0.000		(0.00)	0.001	**	(0.00)	0.001		(0.00)
Exports to US & W. Europe (^3)	-0.000	***	(0.00)	-0.000	***	(0.00)	-0.000	*	(0.00)	-0.000	***	(0.00)
General government gross debt (% of GDP)	0.069	***	(0.02)	0.043	**	(0.02)	0.066	***	(0.02)	0.045	***	(0.01)
General government gross debt (squared)	-0.001	***	(0.00)	-0.001	***	(0.00)	-0.001	***	(0.00)	-0.000	***	(0.00)
Total reserves (% of GDP)	0.031		(0.04)	0.030		(0.04)						
Total reserves (squared)	0.004	***	(0.00)	0.003	***	(0.00)						
Dummy government spending increased	3.486	***	(0.93)	2.900	***	(0.94)	2.994	***	(1.05)	2.476	**	(0.96)
Constant	-0.442		(1.48)	-0.365		(1.62)	2.021		(1.64)	2.628	**	(1.25)
Regional dummies included	no			yes			no			yes		
Observations	94			94			112			112		
R-Squared	0.69			0.73			0.51			0.64		
Notes: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$												

Annex 2 Variable definitions and sources for Chapter 2

Variable name	Definition	Source
Difference in GDP per capita growth rates	Real GDP per capita growth rate in 2009 minus the average real growth rate 1997–2007 (in percentage points).	World Bank, World Development Indicators
Short-term debt (% of total external debt)	Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. Total external debt is debt owed to non-residents repayable in foreign currency, goods or services. Year: 2007.	World Bank, World Development Indicators
External debt stocks (% of Gross national income [GNI])	Total external debt stocks to gross national income. Year: 2007.	World Bank, World Development Indicators
Total debt service (% of GNI)	Total debt service is the sum of principal repayments and interest actually paid in foreign currency, goods, or services on long-term debt, interest paid on short-term debt and repayments (repurchases and charges) to the IMF. Year: 2007	World Bank, World Development Indicators
Financing via int'l capital markets (% of GDP)	Financing via international capital markets is the sum of gross bond issuance, bank lending and new equity placement. Year: 2007.	World Bank, World Development Indicators
Private capital flows, total (% of GDP)	Private capital flows consist of net foreign direct investment and portfolio investment. Year: 2007.	World Bank, World Development Indicators
GDP per capita	GDP per capita is gross domestic product divided by midyear population. Values in constant 2000 US$, in thousands. Year: 2007	World Bank, World Development Indicators
Net foreign assets (% of GDP)	Net foreign assets are the sum of foreign assets held by monetary authorities and deposit money banks, less their foreign liabilities. Year: 2007.	World Bank, World Development Indicators
Exports (% of GDP)	Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. Year: 2007.	World Bank, World Development Indicators
Imports (% of GDP)	Imports of goods and services represent the value of all goods and other market services received from the rest of the world. Year: 2007.	World Bank, World Development Indicators
Trade (% of GDP)	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. Year: 2007.	World Bank, World Development Indicators
Net exports (% of GDP)	Net exports represent the difference of exports and imports as a share of GDP. Year: 2007.	World Bank, World Development Indicators
Exports to US & W. Europe (% of exports)	Total exports from the reporting economy to the United States and Western Europe. Data are expressed as percentage of total exports by the economy. Year: 2007	IMF, Direction of Trade Statistics

Variable name	Definition	Source
General government gross debt (% of GDP)	Gross debt consists of all liabilities that require payment or payments of interest and/or principal by the debtor to the creditor at a date or dates in the future. Year: 2007	IMF, World Economic Outlook Database
Total reserves (% of GDP)	Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. Year: 2007.	World Bank, World Development Indicators
General government final consumption expenditure (annual % growth)	Annual percentage growth of general government final consumption expenditure based on constant local currency.	World Bank, World Development Indicators
Dummy government spending increased	Dummy that takes the value one if growth of general government final consumption expenditure in 2009 was higher that the growth rate in 2007.	World Bank, World Development Indicators
Exchange rate regime	Dummy that takes the value one if the exchange rate regime is *de jure* flexible.	IMF, Annual Report 2009
Exchange rate flexibility	Official exchange rate is calculated as an annual average based on monthly averages (local currency units relative to the US$). Our measure compares the difference of the exchange rate in 2009 and the average from 2003 to 2007 relative to 2009. Higher values stand for more flexible exchange rates and smaller values (close to zero) for less flexible exchange rates. This measure only captures observed changes relative to the US$.	World Bank, World Development Indicators
Fuels, ores, metals and agricultural raw materials exports (% of exports)	The sum of fuels, ores, metals and agricultural raw materials exports by the reporting economy. Data are expressed as a percentage of total exports by the economy. Year: 2007	World Bank, World Development Indicators
Manufactures exports (% of exports)	Data are expressed as a percentage of total exports by the economy. Year: 2007	World Bank, World Development Indicators
Workers' remittances and compensation of employees, received (% of GDP)	Workers' remittances and compensation of employees comprise current transfers by migrant workers and wages and salaries earned by non-resident workers. Year: 2007	World Bank, World Development Indicators
Net ODA received (% of GNI)	Net Official Development Assistance is disbursement flows (net of repayment of principal) that meet the (Development Assistance Committee [DAC] definition of ODA and are made to countries and territories on the DAC list of aid recipients. Year: 2007	World Bank, World Development Indicators
IBRD loans and IDA credits (% of GDP)	IBRD loans and IDA credits are public and publicly guaranteed debt extended by the World Bank Group. Year: 2007, 2009 and difference 2009–2007 (in absolute values)	World Bank, World Development Indicators

Annex 3 Variable definitions for Chapter 3

Dependent variable	Tajikistan	El Salvador	Cambodia
Income from labour	Income from all working activities, including self-employment (first and secondary jobs) as long as payment is regular	Income from all working activities, including entrepreneurial activities (first and secondary jobs)	Income from employment (only paid employees) and monthly income from family business (output– input) and self-employed activities
Income from private transfers	Income from transfers (domestic and international) from friends and family, NGOs, and religious organisations, including child support	Income from domestic remittances (friends and family)	Income from domestic remittances
Income from social assistance	Income from pensions, family allowances (including unemployment benefits and maternity leave) and scholarships	Income from pensions and public transfers	Income from pensions, transfers from NGOs and other institutions, and from stipends and scholarships
Income from remittances	Income from remittances from abroad (only from household members)	Income from remittances from abroad (only from household members)	Income from remittances from abroad (relatives and others)
Income from agricultural production	Income from food that was produced in the household or received as a gift[17]	Income from agricultural production including crops, livestock, fish cultivation, forestry and hunting (output–input)[18]	Income from agricultural production including crops, livestock, fish cultivation, forestry and hunting (output[19]–input)
Income from other sources	Income from rents, sale of assets, inheritance, lottery, interest rates, non-farm household enterprise, etc.	Income from rents, sale of assets, inheritance, lottery, interest rates, dividends, lottery, scholarships, etc.	Income from lottery and gambling, bank interests, dividends, interest on loans to others, gifts received and goods received through barter
Income from working abroad	Average income from a current resident household member's previous travels abroad (over the past 12 months)	Not included	Not included
Education			
No diploma	Main income provider[20] has no diploma	Main income provider has no diploma	Household head[21] has no diploma

17 A specific section on agricultural production was included only in 2007, not in 2009.

18 If a household's monthly income from agricultural production was less than zero, it was recoded as zero.

19 Output includes the value of products consumed by the household, given as gifts and sold.

20 Main income provider refers to the person in the household who receives the highest wage, either for self-employed or for employed occupations (excluding agricultural production in El Salvador).

21 Education refers to the household head, because the main income provider cannot be identified for Cambodia. If the household head reports not working at all (not even self-employed), then the next household member who claims to be working (either employed or self-employed) has been selected.

Dependent variable	Tajikistan	El Salvador	Cambodia
Basic education	Main income provider completed years 1–9	Main income provider completed years 1–9	Household head completed years 1–9
Secondary education	Main income provider completed years 1–11, and/or technical diploma	Main income provider completed years 1–12, and/or technical diploma	Household head completed years 1–12, and/or technical diploma
Tertiary education	Main income provider completed at least 3 years of higher education (college undergraduate, B.A., etc.)	Main income provider completed at least 3 years of higher education (college undergraduate, B.A., etc.)	Household head completed at least 3 years of higher education (college undergraduate, B.A., etc.)
Employment status in main job			
Formal employer	Main income provider is self-employed[22] with hired labour	Main income provider is self-employed with hired labour	Household head is employer
Self-employed	Main income provider is self-employed[23] without hired labour	Main income provider is self-employed[24] without hired labour	Household head is self-employed or own-account worker
Formal employee	Main income provider is employed with work contract	Main income provider is employed with work contract	Household head is paid employee
Informal employee	Main income provider is employed without work contract (including unpaid workers in family business)	Main income provider is employed without work contract (including unpaid workers in family business)	Household head is unpaid worker in family business
Access to social security	Not included	Main income provider is affiliated with social security scheme	Not included
Entitled to sick leave	Main income provider is entitled to sick leave	Not included	Not included
Reliance on transfers			
With social assistance	Household has positive income from assistance, pensions or scholarships	Household has positive income from assistance or pensions	Household has positive income from assistance, pensions or scholarships
With migrating household member	Household has at least one member who is currently working abroad	Household has at least one member who is currently living abroad	Household receives remittances from abroad

22 Self-employed workers are persons who are the sole or joint owners of the unincorporated enterprises where they work, excluding those unincorporated enterprises that are classified as quasi-corporations (OECD Glossary of Statistical Terms).

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