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Over-indebtedness and economic growth: A case study of Portugal, Ireland, Greece and Spain

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Abstract

The paper exposes the relationship between debt and growth. The first part theoretically analyses the debt overhang problem and its mechanism through which debt affects growth: macroeconomic stability, political stability, investment, interest rate, capital flight, inflation, and poverty. We conduct a brief review of these variables in the 4 European countries to identify this phenomenon. The second part we analyze external debt and economic growth by conducting an empirical quantitative analysis, a linear panel data model, using quarterly data from Ireland, Greece and Spain of the period 1990 to 2012. We expect to find a negative relationship between the growth and debt, consistent with the debt overhang theory, and identify what accounted loss of growth can be attributed to their high levels of external debt.

External debt, economic growth, debt overhang

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Introduction

The current high debt levels and its persistent increase combined with a low economic growth in the developed economies have revived the historical debate over the effects of government external debts on the economy. Spain high debt levels not only have simultaneously appeared long with low economic growth and in some period's economic declines and the setting off of social economic problems such as higher unemployment and poverty rates.

The Kingdom of Spain is a developed country, located on the Iberian peninsula in southwestern Europe, with a 7,4796.25 Gross Domestic Product (GDP) per capita in the third quarter of 2013, using purchase parity purchase (PPP, nominal U$). This value is 0.71% less than the GDP per capita PPP of year 2007. During the same period the debt[1] to GDP ratio increased by 155% and in the third quarter of 2013 had an obligation of payment equivalent to 92.67% of its GDP.

The investigation conducts an applied research to determine if the high debt levels are contributing to its negative growth tendency and identify if the theoretical mechanisms in the literature through which the external debt is constraining growth are empirically correlated. The study uses an econometric time series analysis for the case of Spain for the period 1980 (2nd quarter) to 2013 (3rd quarter). In order to confirm this I explore qualitatively and quantitatively the effect of external debt on growth and its mechanisms in the light the debt overhang theory. This paper aims to not only confirm the validity of the existence of a debt overhang situation in Spain but also identify the mechanisms though which external debt affects growth in the case of Spain.

I expect to identify economic distortions created by Spain's relative high levels of external debt and provide some policy suggestions based upon the study.

The organization of this study is the following: Section 2 reviews the theoretical and empirical literature that binds economic growth and external debt. Section 3 conducts the case study of Spain. It addresses this issue two ways. First, an overview of the record of the economic situation and the empirical record of the mechanisms theoretically exposed through which debt affects growth. Second, it presents the time series regression of Spain using quarterly date for the period 1980 to 2013. Section 5 discussion and findings, Section 6 concludes and section 7 we will present the policy implications of our findings.

Literature Review

The foundation of the external debt thinking is problematic to state, but it was addressed by the classical economist like Adam Smith (Smith 1981), David Ricardo (Ricardo 1821/1951) and J. S. Mill (Mill 1965), they constructed the first attempts to construct a conceptual theory and policy implications of the phenomena. At this time the theoretical framework used to study the negative effects of external debt and growth is mainly under the debt overhang theory (Krugman 1988). Before addressing our primary matter I expose briefly some key theoretical constructions dealing with this issue.

An over simplified summary of Adam Smith's and David Ricardo's concerns was that public debt distorted the incentives to invest they believed that its emission represented a future tax increases.

[1] According to the Maastricht definition of external debt.

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This did not only represent a sum cero situation but also generated a crowding effect of productive investment, since private savings moved away from productive investments to nonproductive purposes (Nicholson 1920). J. S. Mill's writings reaffirmed earlier authors but also exposed its influence in the rise of domestic interest rates and inflation (Tsoulfidis 2013, 3-5).Modigliani conducted an empirical analysis of debt using basic economic identities, his result was that it reduced the flow of government revenues and lowered private stocks of capital. He based his argument in the crowding-out effect mentioned by previous authors, and identified a rise of long term interest rates to both government bonds and private lending (Modigliani, 1961).

Meanwhile Diamond using the neoclassical growth model uncovered that reduces in the utility of individuals in the long run due to four reasons: i) the issuance of debt generates future tax increases to finance the new debt, this means that this is a ii) change in the wage balance to interest ratio caused by the impact of taxes on the supply, causing iii) a fall of demand of capital given the level of wages and iv) a drop of the utility factor (Diamond 1965, 1137-1141).

Former issues became relevant in the study of economics and development since the debt crisis in the 1980's affected many developing countries. One of the reasons for this was the economic decline generated and the drops of standard of living of people. This situation provided new empirical and theoretical development; which crystalized in the formulation of the debt overhang hypothesis. A debt overhang situation is defined by as "the presence of an existing inherited debt sufficiently large that creditors do not expect with confidence to be fully repaid" (Krugman 1988, 1-2).

This work speaks of an existing negative relationship between growth and high debt, because from a certain threshold debt begins to generate distortions in the economy. He argues that not all the income that the government receives can be used to pay debt and a portion available for it. This creates uncertainty among investors due to fears of cessations by the government of its financial obligations (default) and its political considerations.

Krugman's early theory has been further developed, now some authors have provided systematic ideas of the transmission mechanisms of the effects of external debt on growth. According to the existing literature there are 6 mechanisms through which debt can affect economic growth, the casual mechanisms are the following: i) macroeconomic instability ii) political instability; iii) investment; iv) interest rate; v) capital flight; vi) inflation and; vii) poverty. We willexplain the casual mechanism of these variables with debt overhang. An overview of them is followed:

Macroeconomic Instability

Macroeconomic instability is an elusive concept, (WB 2005, 93) defines it as the "phenomena that make domestic macroeconomic environment less predictable". Scholars distinguish the effect of external debt and growth along two dimensions. The first dimension concerns the direct effects on some key economic variables, while the second dimension is the indirect effect on the government ability to react to economic shocks (internal or external).

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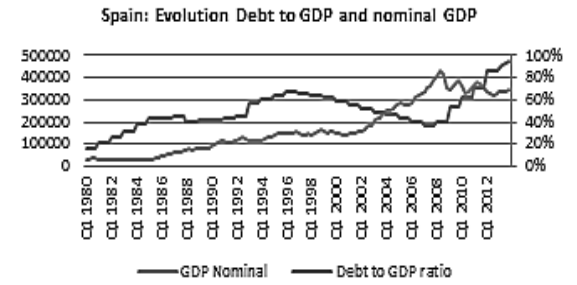
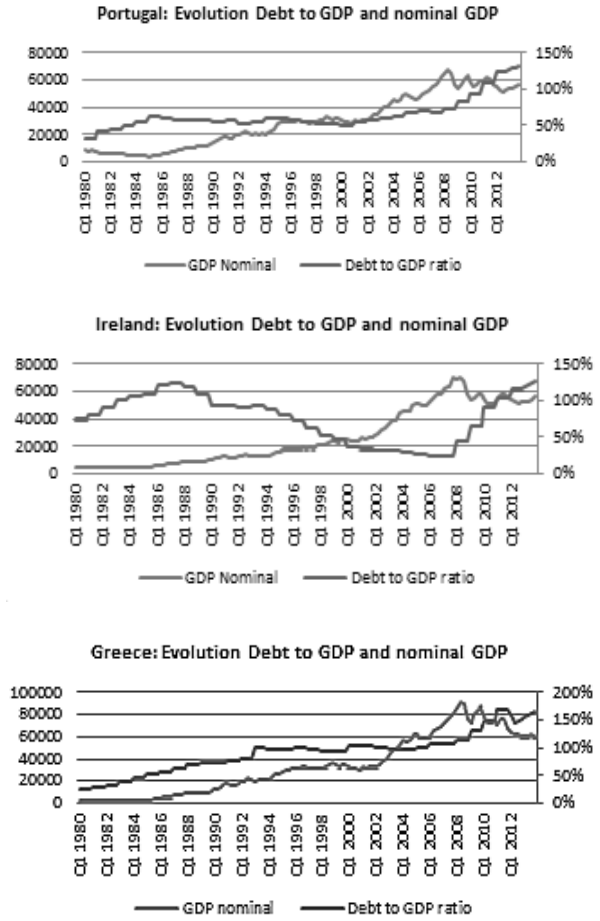


Graphic 1 Growth Domestic Product: 1980s to 2013



Graphic 2 Evolution Debts

The first issue has been addressed by scholars providing case studies which found high debt levels with economic distortions, in variables like budget deficits, trade deficits, inflation rates and exchange rates (Dornbusch and de Pablo 1990). Meanwhile others (Elmendorf y Mankiw 1998, 15-22) identified theoretically distortions in the countries monetary policy and the discipline of budget process in the long run. The explicit empirical work of (Hjertholm 1999, 15-16) analyzed the evolution of 4 variables- i) fiscal deficit; ii) exchange depreciation iii) monetary expansion and inflation and; iv) exceptional finance- and founded that they were statistically significant and contributed to economic volatility.

The second concern, researchers recognized that it lead to an increase vulnerability and probability of economic recessions (Elmendorf y Mankiw 1998, 15-22). The reconsideration (Sutherland, et al. 2012) not only confirms the link previously presented, high debt levels also increase the probability of economic recessions, but also produce a higher volatile behavior of investors in present the business cycles.

Political Instability

This scenario is composed of a variety of measures that affect the wealth of citizens; a few examples of these measures can be the rise of taxes or the introduction of new taxes, currency devaluation, expropriation of private enterprises and the capital flow control measures. All encourage a negative discourse of legal uncertainty towards investors. The emergence of high debt burden linked to the idea of higher debt service obligations undermines the political foundation of the tax system, because it compromises the limited state resource undermining public spending.

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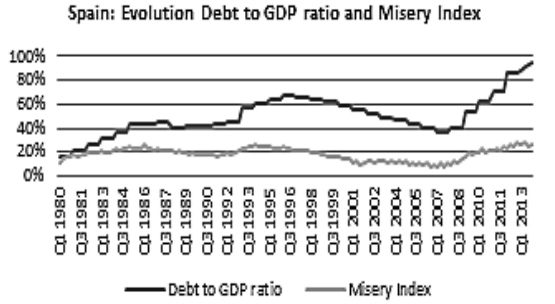
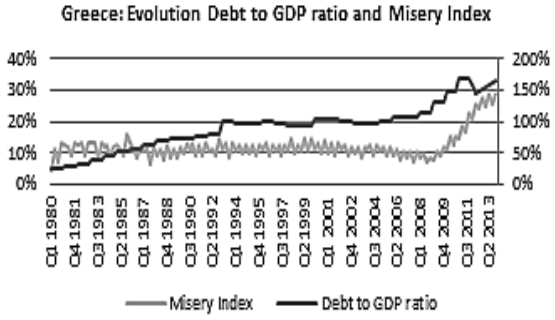
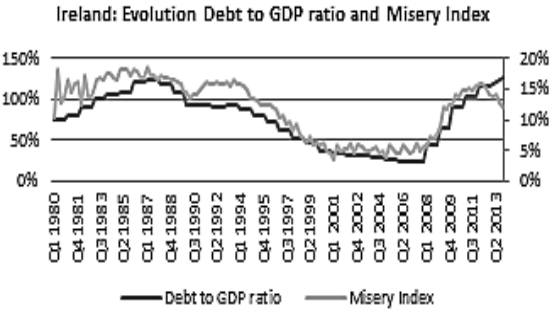
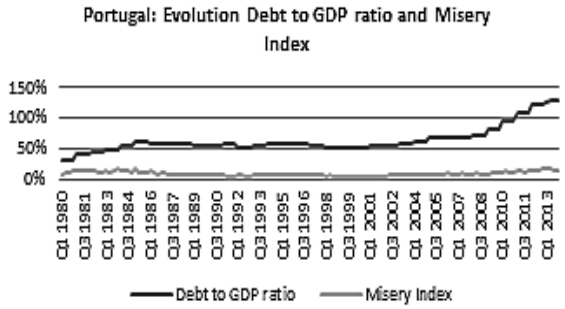
The economic situation leads a drop in public investment and public services of citizens. These measures because popular discontent that can lead to critical levels, strikes, public manifestations of the various groups affected groups, a situation that exacerbates states fiscal stance subsequently paralyzing economic activity and undermines the social support of the government.









Graphic 3 Misery Index: 1980s to 2013

This creates a dilemma in one hand the increase of popular discontent towards ruling party puts the ruling party to question and by the other if they continue to pay creditors they will lose further support for the next political elections or not pay creditors and main the political power. The future of the political party in office next elections and by the other political parties trying to benefit political gaining public support exacerbates these fears. This dilemma generates fears of suspension of debt payments and unpredictable public policies.

Investment

If the level of external debt of a country is believed to exceed their ability to pay the expected costs of debt service will discourage private investment (Savvides, 1992) and also public investment (Seriux and Yiagadeesen 2001) and (Clements, Bhattacharya and Nguyen 2003) and foreign direct investment causing a slowdown in economic growth as noted by (Krugman 1988), (Sachs 1989), (Cohen 1993) (Green and Villanueva 1991) (Servén 1997) and confirmed this linkage. The volume of investment is altered by investors who may prefer to wait - in - uncertainty scenarios with irreversible investment projects, hoping to get more information, to avoid costly mistakes (Garciandía Garmendia 2011).

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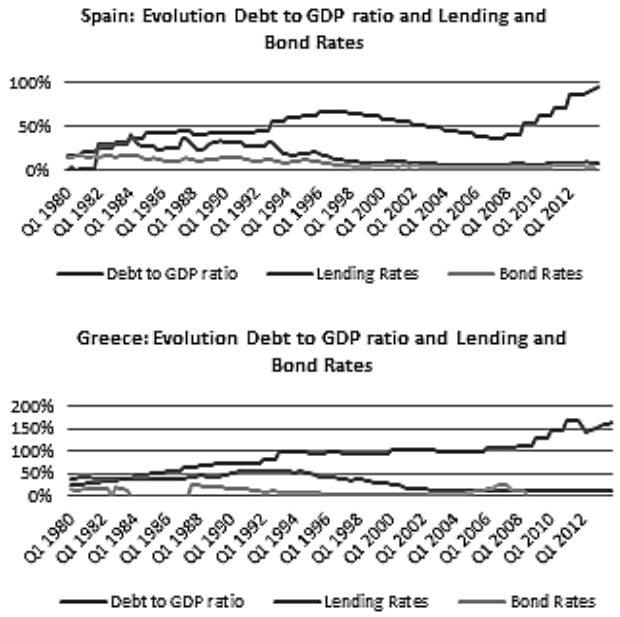
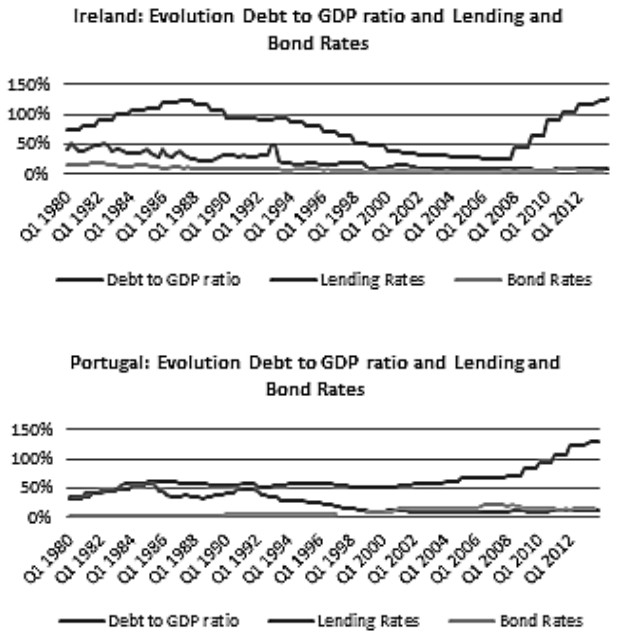
This is based on the principle that an uncertain environment and investment fixed, because if it is impossible to reverse the investment there is an incentive to postpone financial obligations pending more information.

Interest rate

The deterioration of the economic situation raises the risk premium for government bonds; the cost level of state funding climbs and this subsequently also increases domestic interest rates. In the long run the high level of indebtedness increases the rate of long-term interest (Baum, Checherita-Westphal y Rother 2012) and (Laubach 2007). This increase in the risk premium can be explained by changes in the valuation of the State concerned solvency, profitability and probability of default titles. This creates two effects: First, it raises the rate of profit necessary for an investment is held. If there is the same risk of investing in public external debt and make a productive investment if the interest rate paid by the state is higher than productive investment, the private sector will invest in government bonds.





Graphic 4 Interest Rate: Spain 1980 to 2013

Second, commercial banks interest rate rises aimed at undermining the productive activity private spending both households and enterprises (Elmendorf y Mankiw 1998, 18). On the one hand this increases the cost of financing the private sector and the other affects the amount of resources you can allocate the financial system to the granting of loans to the private sector. The mainstream took notice that also erodes external competitiveness; a large influx of non-productive capital raises relative prices (Dornbusch 1989, 334).

Capital flight

The literature (Pastor 1990) (Ajayi 1997) relates the phenomenon of indebtedness and capital flight, these showed that external borrowing generates a series of economic imbalances such as : the overvalued exchange rate, high budget deficits, rise in tax rates, the high level of inflation that stimulate capital flight.

The consequences of this phenomenon related to external borrowing are: i) a reduction in the potential growth of the economy, ii) a decrease in the tax base , and iii) a redistribution of income , ranging from the poor to the rich (Pastor 1990).One can argue that the underlying diagnosis is that capital flight is the response to economic circumstances attributable to external borrowing (J. K. Boyce 1992, 337). Some of this mechanisms have already been exposed but this time stimulating capital flight i) fear of the likelihood of debt crises (Eaton 1987), macroeconomic instability (Fry 1993), (Ndikumana y K. Boyce 2003, 109) and (Dornbusch, External Debt, Budget Deficit and Disequilibrium Exchange Rate 1985) asymmetry of risks associated with the investment (Eaton 1987) and (Khan y Ul Haque 1985) and any detriment of other elements that adversely affect the national rate of return.

Inflation

A country with a high level of debt has an impact on production costs and price volatility generating goods and services to macroeconomic imbalances arising from the debt.

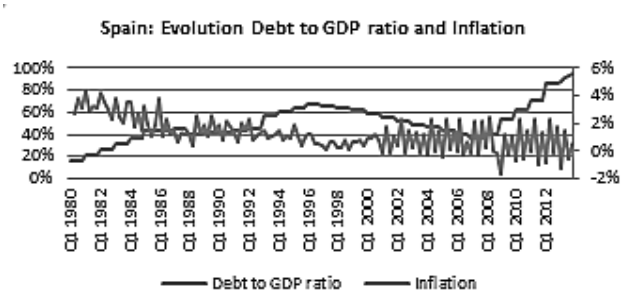
Understanding how debt affects the inflation involves understanding the determinants of it. A simple model of price level in the long term depends on the exchange rate, money supply, wages, the price of exports in the world market, and the prices of imported inputs:

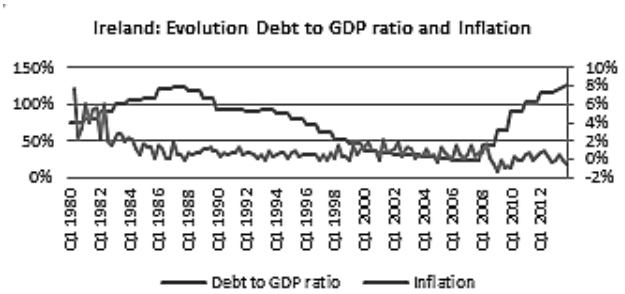
$$P = P(E, MS, W, PX, PM) \quad (1)$$

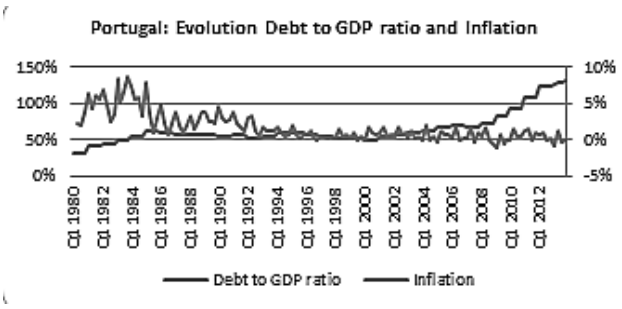
Where E is the exchange rate of NOMINAL (local currency per unit of foreign currency), MS is the money supply, W is the average wage nominal.

PX the export price in the world market and PM the price of imports in the world market. MS increases, W, PX and PM tend to raise the price level, while the appreciation of the national currency (decrease in E) tends to reduce it.

First, fiscal expansion crowds out private investment and results in a lower capital stock, which is associated with a marginal product of capital and higher real interest rates, the second effect is through the default risk premium (stop payment).







Graphic 5 Inflation: Spain 1980 to 2013

Conclusions

The relationship between debt and poverty was exposed by (Kemal 2001), (Loko, et al. 2003) and (Maier 2005), they found that the high external debt level increases poverty. (Maier 2005, 7-11) identified the following mechanisms. First a highly leveraged impact on poverty through the state budget, the increase in debt service lead to changes in priorities and the level of public investment to the detriment of the most vulnerable sectors of the population. In other words, the state budget constraint requires changes in public investment further hurting the poor.

Fiscal contraction of social spending, further harms the most vulnerable to be the main beneficiaries sectors. The education and health coverage affect human capital assets and transfers: grants, unemployment insurance, etc.

The government employs macroeconomic policy adjustments in order to balance the external imbalance resulting from the high level of indebtedness, among them we can mention the labor reforms in order to lower the employment and unemployment had a negative impact on poverty and currency depreciations that would lead to less internal consumption.

Annexes

Data Source

Variable	Source	Comments
Growth Domestic Product	(Datastream International Ltd 2013a) and (Datastream International Ltd 2013b)	Nominal at US Dollar Million, Current prices, seasonally adjusted and % of GDP
Debt	Elaboration of Author and (Datastream International Ltd 2013c)	Nominal Data was calculated using the data of Debt to GDP ratio and the GDP at Nominal Terms. Debt to GDP data is the Gross Government Debt (% of GDP) using the Maastricht Definition
Investment	(Datastream International Ltd 2013f) and (Datastream International Ltd 2013g)	Total Fixed Investment at Nominal US Dollar Million and % of GDP
Foreign Direct Investment	(Datastream International Ltd 2013h)	Nominal US Dollar Million, The % of GDP was calculated using FDI and GDP at nominal terms.
Capital Flight	(Datastream International Ltd 2013i)	Net, Current prices, not seasonally adjusted. Nominal US Dollar Million
Lending Rate	(Datastream International Ltd 2013k)	Not seasonally adjusted
Bond Rate	(Datastream International Ltd 2013j)	Government Securities, Government Bonds, Not seasonally adjusted
Unemployment Rate	(Datastream International Ltd 2013d)	Not seasonally adjusted
CPI	(Datastream International Ltd 2013e)	Index. It's based on the Harmonized EU Definition, Price index not seasonally adjusted
Inflation Rate	Elaboration of Author	Calculated using the CPI and applying the formula of Inflation ($(CPI_1-CPI_0)/CPI_1$)
Misery Index	Elaboration of Author	Calculated Using the Inflation Rate plus the Unemployment rate
Consumption Government	(Datastream International Ltd 2013k)	Nominal US Dollar Million, Current prices, seasonally adjusted and also obtained it % OF GDP
Consumption Private	(Datastream International Ltd 2013l)	Current prices, seasonally adjusted, Nominal at US Dollar Million and also obtained it % OF GDP
Gross Savings	(Datastream International Ltd 2013m)	Billions of Euros, Current prices, not seasonally adjusted
Investment Climate	(Datastream International Ltd 2013n)	Climate for Foreign Investment – Percent , Political Stability
Poverty	(Eurostat 2014a) and (Instituto Nacional de Estadística 2014b)	People at risk of Poverty or social Exclusion in %. According to Eurostat "At risk-of-poverty are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). Material deprivation covers indications relating to economic strain and durables. Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone. People living in households with very low work intensity are those aged 0-59 living in households where the adults (aged 18-59) work less than 20% of their total work potential during the past year."

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