

ただし、製造業において事業主の負担する社会保険料が賃金コストに占める割合は2004年では旧西独地域で16%、旧東独地域で17%にとどまっている(Schröder, 2005: 4-7)。それにもかかわらず、政治的な議論においては事業主の負担する社会保険料の意義が賃金コストを構成する他の要素に比べて強調されすぎている面がある。

以下においては、年金保険、医療保険及び失業保険において実施された財源見直しについて検討する。

(1)年金保険

年金保険の財源として国(連邦)からの補助(連邦補助(Bundeszuschuss))は重要な役割を担っている。2010年では年金保険への「一般的な連邦補助(Allgemeiner Bundeszuschuss)」は399億ユーロとなっており、年金保険の収入総額の16.3%を占めている²¹。「一般的な連邦補助」の額は、基本的に、平均グロス労働報酬の伸び率と保険料率の変化に応じて毎年改訂されている。これにより、連邦の負担が被保険者の保険料負担の変化と歩調を合わせて増減する仕組みとなっている。

年金保険に対しては、この「一般的な連邦補助」に加え、「追加的な連邦補助(Zusätzlicher Bundeszuschuss)」が行われている。「追加的な連邦補助」は1998年に導入されたものである。その目的は、当時の年金保険料率(20.3%)が更に上昇することを避けることにあった。「追加的な連邦補助」に必要な費用は、1998年4月に付加価値税率を15%から16%に引き上げるにより得られた連邦財政の増収により賄われた。「追加的な連邦補助」の額は、2000年以降、付加価値税収の変化に応じて改定されている。

さらに、2000年からは、環境保護的な税制改正による連邦財政の増収(環境税(Ökosteuern))を用いて、この「追加的な連邦補助」の上乗せが行われることになった。この上乗額(Erhöhungsbetrag)は、2004年以降、被用者一人あたりのグロス賃金の伸びに応じて改定されている。

上乗額を含めた「追加的な連邦補助」は、2010年では191億ユーロとなっており、年金保険の収入総額の7.8%を占めている²²。この結果、2010年の年金保険に対する連邦補助は全体で590億ユーロとなっており、年金保険の収入総額の24.1%を占めている(表3)。

現在の連邦補助は、年金保険の創設当時の国庫補助のように給付の一部(基礎額)を負担するものではなく、所得再分配機能を持つものではない。したがって、連邦補助が行われることにより、支払った保険料と受けられる給付との関連性が弱まるわけではない。

連邦政府の説明によれば、連邦補助は複数の目的を持っている(Bundesregierung, 2004: 571)。そのうちの一つは、年金保険が経済的・社会的な環境変化にかかわらずその機能を発揮できるようにすることである。人口学的な変化に伴う負担の増加を被保険者のみに負わせるのではなく、連邦もその負担を適切に分担するために連邦補助を増額することは、このような目的に沿ったものといえる。また、このような連邦補助を行うことにより、保険料負担者や給付受給者の過度な負担を避けることができる。連邦補助のもう一つの目的は、本来は保険料で賄われるべきでない給付のために年金保険が負担している費用を連邦

²¹ DRV (2011: 228) による。

²² 同前。

が補填することとされている。

実際の連邦補助の額は2003年では539億ユーロである。ただし、この額に児童養育期間に対応して連邦が負担した保険料の額(37億ユーロ)を加えると、総額は578億ユーロとなる。この総額を前述の「保険になじまない給付」と比較してみると次のような結果となる。「保険になじまない給付」を1995年にドイツ年金保険者連盟が定めた基準の範囲でとらえた場合には、連邦補助の額はそのための支出の額(570億ユーロ)を上回っている。しかし、「保険になじまない給付」を専門家委員会のようにより広範にとらえた場合には、連邦補助の額はそのための支出(650~700億ユーロ)を大きく下回っている。

(2)医療保険

医療保険においては、税財源の投入は最近まで農業疾病金庫に対してのみ行われてきたにすぎなかった。しかし、2004年からは医療保険への税財源の投入が本格的に行われることになった。すなわち、「保険になじまない給付」のための疾病金庫の支出を補填するために、たばこ税の引き上げによる連邦の増収分を基に医療保険への連邦補助が行われることになった。その後、この連邦補助の増額が行われた。連邦補助の額は2010年では118億ユーロとされ、その後は1年ごとに15億ユーロずつ、総額140億ユーロにまで引き上げることとされている。なお、2010年には「リーマンショック」による金融・経済危機をもたらした収入の減少に対応して、臨時的な連邦補助(39億ユーロ)が行われたため、これを加えた連邦補助の額は157億ユーロとなっている。いずれにしても、この連邦補助の額は、専門家委員会が算定した「保険になじまない要素」の額(450億ユーロ)を大きく下回っている。

(3)失業保険

失業保険に対しては、従来、連邦により赤字補填が行われてきた。しかし、2005年の大連立政権発足時に連立政権を構成するキリスト教民主・社会同盟(CDU/CSU)及び社会民主党(SPD)との間で合意された連立協定に基づき2007年1月に失業保険の保険料率が2%ポイント引き下げられるのに対応して、連邦が付加価値税による収入を基に失業保険への財政負担を行うこととされた。この連邦による財政負担の額は、2010年には約79億ユーロとなっており、2011年以降は付加価値税収の変化に応じて改定することとされている。失業保険の場合にも、連邦による財政負担の額は専門家委員会の算定した「保険になじまない要素」の額(190億ユーロ)を大きく下回っている。

5. むすび

社会保険への国庫負担を巡る歴史的な経緯からも明らかのように、社会保障の財源に関する現実の政策は必ずしも理論的な根拠に基づいて行われてきたわけではない。19世紀の終わりに社会保険が導入された際に形作られた基本的な枠組みがその後何十年にもわたり受け継がれてきたように、社会保障財源の在り方は沿革に大きく依存したものであった。

近年において、社会保険の財源に関する政策については、従来の税から社会保険料へのシフトを進める方向から、社会保険料から税へのシフトを進める方向へと大きな転換が行われた。こうした政策転換の重要な契機となったのは、社会保険財政の悪化により社会保

険料率が上昇する一方で、大量の失業が発生したことである。国際競争が激化するなかで、国際的にみて既に高い水準にあった社会保険料率がこれ以上に上昇することは、賃金付随コスト増加させることによりドイツ企業の国際競争力を弱め、国内の雇用情勢をさらに悪化させることが強く懸念された。このような懸念を背景として、社会保険料の上昇を避け、さらには、引下げを図ることへの政治的な圧力が高まった。この結果、社会保険料を軽減し、国内雇用の改善を図ることは、連邦議会を構成する二大政党(キリスト教民主・社会同盟及び社会民主党)のいずれにも共通する重要な政策目標となった。このため、政権交代が何度か行われたにもかかわらず、社会保険料負担の軽減を図ることは、過去20年以上にわたる改革において重要な目的の一つであり続けた。

なお、社会保険料の軽減を求める圧力が高まっている背景として、各国が自国の制度を企業にとってより魅力的なものとするを競い合ういわゆる「システム競争」の存在を指摘することができる。「システム競争」が起こる背景としては、EU域内における人・物・サービス・資本の自由移動が保障される中で、ある加盟国の経済主体が他の加盟国に移動することにより、それまで所在していた国の規定の適用を免れることができる可能性が高まっているという状況がある。企業により重い負担を課す社会保障制度は企業の国際競争力を弱めることから、そのような社会保障制度を有する国の立地場所としての魅力は、他の国との比較において低下する恐れがある。そうなれば、企業の生産拠点がそのような国から他の国に移転することになり、これによって、国内雇用の減少、失業者の増加などの問題が生じることが危惧される。このため、各加盟国は、社会保障に関する政策についても自由な製品市場及び資本市場における競争力の維持に配慮することが求められるようになってきている。

ドイツについて特に注目されることは、このような政治的な動きと並行して、社会保険における財源の在り方を巡る理論的な検討や議論が研究者や保険者団体等に所属する専門家の間で活発に行われてきたことである。そのなかでは、社会保険の給付等のうち税財源により賄うべきものと社会保険料財源により賄うべきものを区分する考え方が検討され、提示されている。こうした考え方を基に、実際に行われている社会保険の給付等のうち本来は税財源により負担されるべきものが具体的に特定され、その総額が明らかにされている。これにより、現在の国庫補助が税財源により負担されるべき額を十分にカバーしているのかどうか、また、カバーしきれていないとすれば更にもどの程度の国庫補助が必要なのか理論的に示されている。

社会保険の財源に関してこれまで行われてきた政治的な決定は、それぞれの関係者(団体)の利害や政治力、現実政治的な実施可能性などに左右されてきた。このため、制度の考え方に合わない財源が選択され、公的に行われる再分配はより不透明なものとなった。しかし、高齢化の進展等に伴い増大する社会保険の支出を賄うためにより多くの費用の負担を求めていくためには、費用を負担する人々の社会保険への信頼を高め、より多くの費用を負担することへの納得を得ることが不可欠である。このためには、社会保険における財源の在り方を理論的に明確にし、それに基づき現状にあるべき姿に近づけるためにとるべき措置を具体的に示すことが重要であると考えられる。ドイツにおける理論的な検討や議論はまさにこのような必要性に対応したものといえる。

社会保険制度の基本的な考え方には国による重要な相違点がある。例えば、ドイツの社

会保険は基本的に被用者を対象としているのに対して、日本では皆保険・皆年金となっている。ドイツでは受けられる年金の額は支払った保険料に応じたものとなっている。これに対して、日本の場合には、厚生年金加入者であっても、受けられる年金の額は支払った保険料に応じた部分と保険料にかかわらない部分とから成り立っている。したがって、ドイツにおいて議論されている社会保険の財源区分の考え方がそのままの形で他の国にも適用できるわけではない。

また、ドイツにおいても、現在の医療保険で行われている低所得者と高所得者との間の所得再分配を「保険になじまない」と考えるかどうかについては、大きく見解の分かれるところである。このような見解の違いは、将来に向けた改革案として、被保険者の所得にかかわらない定額の保険料(人頭保険料)により、医療保険における調整を健康上のリスクに関するものに限定する案が提案される一方で、医療保険における所得再分配機能を強化する観点から、被保険者の範囲を全国民に広げるとともに、賃金だけでなく資産所得なども保険料算定基礎とする保険制度(国民保険)を導入する案が提案されていることにも表れている。

しかしながら、高齢化の進展などに伴い増加する費用について、より多くの負担を求めていくのであれば、負担者の理解と納得を得るために、それぞれの国の制度の基本的考え方や特性に応じた財源の在り方を理論的に示していくことが必要になると考えられる。ドイツにおける試みは、そのための方法として示唆に富んだものである。

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Does Income Transfer to the Household with Children Contribute to Human Resource Development and Economic Growth? In the Case of Japanese Household

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1. Introduction

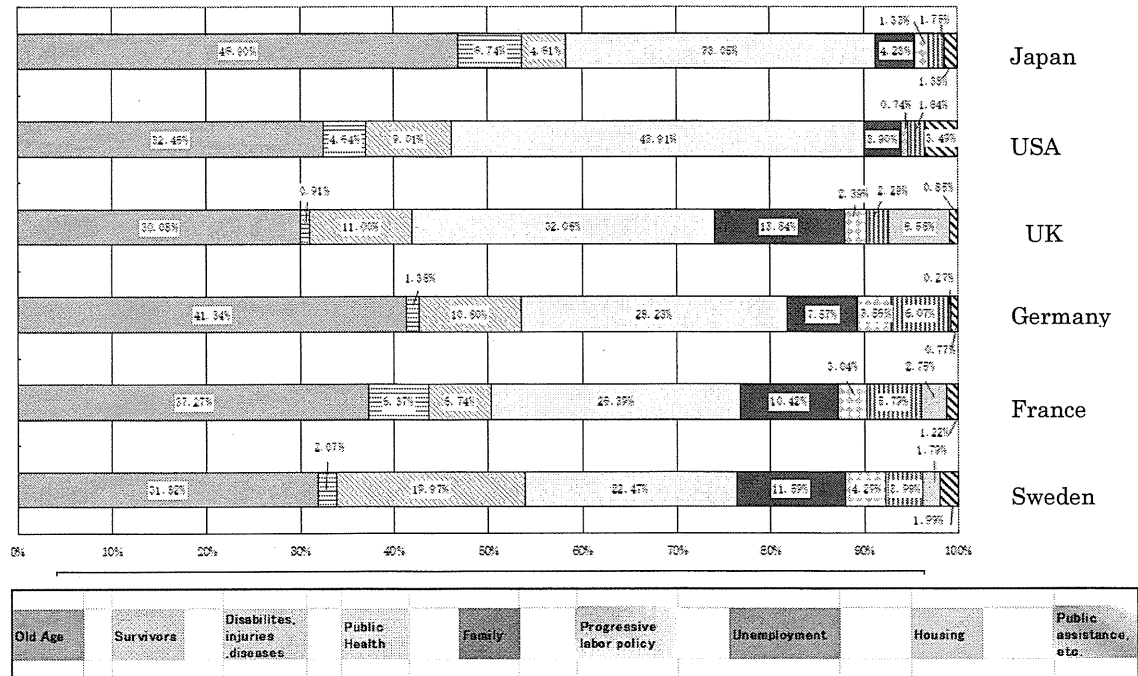
In Japan, the country having the highest ratio of the population of 65 years and over in the world, the greater part of social security benefit expenses is spent for the benefits mainly for the aged, such as pensions, health care benefits and long-term care benefits. Figure 1 shows an international comparison of the composition of social security benefit expenses according to the ILO standards. On the other hand, the unemployment rate of young people in Japan is not very high internationally but has been at a high level of about 8% since 20 years or so ago when the economic growth rate in Japan began to decline. However, under the illusion about the high economic growth rates and low jobless rates it enjoyed 20 years ago, Japan still has not been able to face up to reality yet.

For the reason just mentioned, Japan has not implemented any adequate policy for promoting the employment of young people. Partly affected by the traditional practice of the seniority system, Japan has adopted neither 'flexicurity' policy nor active labor market policy, which has been widely introduced in Europe. It was only recently that Japan began to realize the importance of these policies.

In fact, in Japan, in-house job training and other steps for the benefit of employees are amply provided, especially in big businesses, and employees are still given a quite sufficient guarantee that they are not fired very easily once employed. As a result, there exists inequality at the starting point of the working life of employees: whether or not they are employed by a good company, especially by a large company, greatly affects their working conditions, wages, etc. in the future.

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Fig.1 International Comparison of Social Expenditures Classified by Policy Agenda in 2005



Source: The Cost of Social Security in Japan: Fiscal Year 2007 (April 2007 to March 2008), the National Institute of Population and Social Security Research.

In order to overcome these issues of social policies and to construct a sustainable social welfare system, a balance among self-help, mutual assistance and public assistance is necessary, but these relationships are affected by socioeconomic conditions as well as the living conditions of the person and their family. Self-help consists of one's own self-help and help from family members; help from family members is made up of cases where the parent aids the child and cases where the child aids the parent. Aid from the parent to a child consists of aid through child rearing and education, such as paying for educational expenditures up until when a child completes schooling and they can find employment so that in the future, the child can live an abundant life. Even after the child becomes an adult, there are cases where the parent supports the child economically during times when the child has trouble making a living. On the other hand, aid from the child to the parent consists not only of cases of economic support when the parent has trouble making a living, but cases of help based on services within the household budget, such as administering care when care becomes necessary.

Such a kind of mutual cooperation within a family may be complemented by so-called public assistances such as revenue transfer and based on public resources such as child allowance and scholarships, which provide support for child rearing fees to low-income households, and alleviation of medical fees for children by local public entities. On the other hand, mutual cooperation within a household and social insurance as mutual assistance consist of alternative cases (cases where the child provides entire care for the parent) and complementary cases (cases where the child provides supplementary care for the parent while utilizing nursing care services).

In such a way, among self-help, mutual assistance and public assistance, there are both alternative relationships and complementary relationships, and in order to realize benefits and burdens that increase sustainability of the social welfare system by promoting a balance among these three, it is important to know these 2 different relationships, and it is also necessary to quantitatively comprehend the actual state related to these relationships for the process of policy assessment. In particular, although the child allowance was introduced, there is some debate regarding its economic effects, and it is an important challenge to empirically clarify the role of compensation of parents' support toward their children and the increase in economic welfare of household income and expenditures. In addition, the employment environment of young persons is one where, in recent years, the ratio of job offers to job seekers is low and the unemployment rate is high as compared to the era of economic growth when their parents started working, and there are now occasionally cases where parents provide economic support when their children have difficulties making a living. Parents' economic support for their children who have already reached a working age has the possibility of lowering economic incentives for the children to work. In order to promote a balance among self-help, mutual assistance and public assistance, it is necessary to empirically analyze these kinds of problems as well.

Up until now, preceding research regarding economic support between parents and children has been conducted, including economic analysis of education with respect to educational investment by parents in relation to their children (Arai (1995), Oshio (2002), etc.) and analysis of motivation for savings to put away inheritance money so that parents can receive support from their children in cases where they require nursing care in the future (Komamura (1994), Horioka (2002)). However, analysis regarding the respective impacts of mutual cooperation and the social security system on parents and children that focuses on the alternative/complementary relationships between mutual cooperation between parents and children and the social security system have not necessary been sufficiently conducted. Thus, from among mutual cooperation between parents and children, this paper focuses on economic support by parents for their children, and carries out analysis by dividing such mutual cooperation into two categories—one where the children are of an age before they generally start working (less than 18 years of age) and another category where the children have passed the age of starting work up until they reach the period where they rear their own children (20 years old to less than 40 years old). In other words, using the "Survey on Social Security and People's Life," which includes survey items on the state of use of the social security system and the state of parents' economic support and the social welfare system, the economic effects that social security benefits such as childcare allowance, etc. have on parents were analyzed, by focusing on households with children who are less than 20 years of age, and the effects that parents' economic support have on their children's (20 years to 39 years of age) on action to move into the workforce are analyzed. Upon combining these analyses, speculations were made on the conditions for balancing self-help, mutual assistance and public assistance in accordance with future changes in socioeconomic conditions; in addition to introducing policy implications, future challenges are

discussed.

2. Relationship between parents' expenditures on their children and social security benefits (public income support) for children

2-1 Relationship between social security benefits and parents' expenditures on their children

Expenditures by parents on their children contribute to the children's growth, but the children's income that the children can obtain upon completing their education and joining the labor market is uncertain—it may be high based on multiple factors such as the attributes of the child, including their educational background, and the supply and demand conditions of the labor market, or it may not be high. Parents are aware of the uncertainty of the growth of their expenditures on their children, but make such expenditures anyway based on altruistic feelings. The utility function of such kinds of parents can be expressed in the following equation, where consumption of the parents' own goods and services is x , the child's future revenue is I , and the parents' expenditures on the child (transfer of revenue) is b . Here, r represents the interest rate without uncertainty (Note 1).

$$(i) \quad U=U(x, I+rb)$$

The child's future revenue (I) is related to the child's educational background (S), since wages in the actual labor market differ depending on educational background, but it does not necessarily depend only on educational background. Accordingly, the child's revenue is considered as depending on the educational background as well as attributes ε other than educational background, and the following supposition can be made. As with regular production functions, it is hypothesized that this revenue function fulfills the following conditions.

$$(ii) \quad f_S = \partial f / \partial S > 0, \quad f_{SS} = \partial^2 f / \partial S^2 < 0, \quad f_{S\varepsilon} = \partial^2 f / \partial S \partial \varepsilon > 0$$

When ε is given to a child's educational background, it is hypothesized that the child advances to institutions of further higher education as the parents' expenditures C_e toward the child increase, and the child is able to obtain a higher educational background. In other words, educational background S is an increasing function for expenditures for the child C_e .

$$(iii) \quad S=S(C_e), \quad S_{C_e} = \partial S / \partial C_e > 0, \quad S^2_{C_e} = \partial^2 S / \partial C_e^2 < 0$$

In cases where there are no expenditures by the parents in relation to the child, and there is no human capital accumulation with regard to the child ($S=0$), the child can only earn a low income in the labor market; the future income of the child in such cases is the total of the revenue ($I_0=f(0,\varepsilon)$) and the transfer of revenue from the parents to the child (rb), or in other words, (I_0+rb). Here, I_0 is the

wage income for unskilled labor. On the other hand, expenditures by the parents in relation to their child turn into human investment ($S > 0$), and if the child can obtain a high revenue, the child's future income (z) can be expressed as follows.

$$(iv) \quad z = f(S, \varepsilon) + rb$$

If P is the probability of the case that expenditures on the child do not turn into human investment and the child can earn only low revenue, the probability that such expenditures come to fruition and the child earns high revenue is $(1-P)$. Based on this condition, the parents' expected utility can be expressed as follows.

$$(1) \quad E(U) = PU(x, I_0 + rb) + (1-P)U(x, f(S(C_e), \varepsilon) + rb)$$

If Y is the parents' income, the parents' budget constraint can be expressed as the following formula.

$$(1-2) \quad Y = x + b + p_s S(C_e), \quad b \geq 0$$

Accordingly, under such a budget constraint, the parents select their own consumption x and the child's C_e and b , and maximize their own expected utility. Based on the first-order conditions for maximizing expected utility, the following formula is introduced (the equality holds when $b > 0$).

$$(2) \quad r p_s = (1-P)[U_{sz} f_s(C_e) S C_e] / E(U_z)$$

The relationship between income support (A) based on social security such as childcare allowance and child allowance and parents' expenditures on their children has the following impacts with respect to expenditures towards the human investment of the child C_e and transfer of revenue to the child b .

$$(3) \quad \frac{\partial C_e}{\partial A} = \left(\frac{\partial C_e}{\partial S} \right) \left(\frac{\partial S}{\partial A} \right) = \left(\frac{\partial C_e}{\partial S} \right) \left(\frac{\partial S}{\partial Y} \right) \left(\frac{\partial Y}{\partial A} \right) \\ = (S'(C_e)) \{ r^2 p_s E(U_{xx}) E(U_{zz}) \} \{ 1 - [(U_{zzz} / U_{zz}) / (E(U_{zz}) / E(U_z))] / D \} \times \frac{\partial Y}{\partial A}$$

$$(4) \quad \frac{\partial b}{\partial A} = \left(\frac{\partial b}{\partial Y} \right) \left(\frac{\partial Y}{\partial A} \right) = E(U_{xx}) (1-P) [(1-r) f_s U_{zz} + U_{sz} f_{ss}] / D,$$

Here, based on the second-order conditions for maximization of expected utility, the following formula is obtained.

$$(4-2) \quad U_{jj} < 0 (j=x, z), \text{ and } D > 0.$$

Accordingly, the impact of transfer of revenue (economic support) on children receiving public income support is $\partial b/\partial A > 0$, representing a complementary relationship. On the other hand, the impact of public income support on expenditures towards children that include educational fees depends on the partial differential code below.

$$(5) \quad \partial C_e / \partial A = (\partial C_e / \partial S)(\partial S / \partial A)$$

For this partial differential, the code cannot be determined unless more hypotheses regarding the extent of risk aversion of the parents' utility function are established; public assistance may be complementary or alternative to expenditures toward children.

Essentially, public income support for child rearing is provided to increase parents' expenditures on raising and educating their children, but theoretically, there are cases where, depending on the parents' preference, aid has a complementary effect of increasing private expenditures by parents towards their children, as well as cases where aid has an alternative effect of decreasing private expenditures. It is necessary to conduct empirical analysis regarding which effect is actually manifested more.

2-2 Empirical Analysis²

For this purpose, an empirical analysis is conducted in this paper by using the Survey on Social Security and People's Life (2007) that was implemented by the National Institute of Population and Social Security Research in July 2007. This survey investigated the state of individuals (form for individuals) and the state of households (form for households) as of July 1, 2007, targeting heads of households and household members aged 20 to 69 years old living within a survey district (300 districts) selected randomly from among the survey districts (5,440 districts) that were established in the 2007 "Comprehensive Survey of Living Conditions of the People on Health and Welfare" implemented by the Ministry of Health, Labour and Welfare. As a result, there were valid responses (response rate of 68.2%) in relation to the 15,782 forms for households that were distributed (number of households subject to the survey). In addition, with regard to the 20,689 forms for individuals that were distributed to 20 to 69-year-olds of households from which forms were collected, 17,188 were valid responses (response rate of 83.1%).

According to this survey, the percentage of people who have children consisted of 80.8% males and 79.6% females, with regard to persons who have spouses, and 55.8% males and 74.7% females, with regard to persons who are separated or widowed. When limiting to only children who are 17 years or younger, the percentage of people who have such children consisted of 40.1% males and

² The authors thank you for the permission of using the micro data of the Survey on Social Security and People's Life (2007) from IPSS and from the Department of Statistics and Information of the Ministry of Health Labor and Welfare of Japan.

36.9% females, with regard to persons who have spouses, and 18.3% males and 27.0% females with regard to persons who are separated or widowed.

Table 1 State of expenditures spent on children (17 years and younger) according to the parents' educational background and income level

		children (17 years and younger) (monthly amount, thousand Yen)		
educational background	annual income level	average amount	standard deviation	number of observations
Junior high school	Less than 1.3million yen	66	103	14
	1.3million yen~less than 2.5million yen	75	109	18
	2.5million yen~less than 3.5million yen	212	293	21
	3.5million yen~less than 7million yen	269	322	32
	7million yen~less than 10million yen	268	374	6
	10million yen~less than 15million yen	-	-	-
15million yen and more	-	-	-	
sub total		181	269	94
High school	Less than 1.3million yen	219	313	50
	1.3million yen~less than 2.5million yen	268	311	94
	2.5million yen~less than 3.5million yen	249	323	143
	3.5million yen~less than 7million yen	339	362	363
	7million yen~less than 10million yen	472	469	166
	10million yen~less than 15million yen	505	509	52
15million yen and more	483	426	14	
sub total		351	394	888
Junior college	Less than 1.3million yen	334	361	20
	1.3million yen~less than 2.5million yen	291	329	27
	2.5million yen~less than 3.5million yen	300	360	37
	3.5million yen~less than 7million yen	317	335	110
	7million yen~less than 10million yen	448	455	48
	10million yen~less than 15million yen	657	430	15
15million yen and more	688	596	4	
sub total		363	383	261
Univers	Less than 1.3million yen	164	258	14
	1.3million yen~less than 2.5million yen	290	418	16
	2.5million yen~less than 3.5million yen	285	358	49
	3.5million yen~less than 7million yen	393	434	254
	7million yen~less than 10million yen	491	450	226
	10million yen~less than 15million yen	622	544	107
15million yen and more	758	542	66	
sub total		478	480	748

Note: The minimum level of taxable income for 2007 was 3.25 million yen for households consisting of a father, mother and two children, and 2.2 million yen for households consisting of a father, mother and one child. The maximum income with which dependency exemption for social insurance premium can be received is 1.3 million yen.

Source: the author's tabulation based on "Survey on Social Security and People's Life" (2007) by the National Institute of Population and Social Security Research.

Next, when looking at the ratio of expenditures spent on children according to the age of the

children and the marital state of the parents, the rate of expenditures spent on children 17 years and younger consisted of 95.9% males and 94.7% females in cases where the parent had a spouse, and 92.7% males and 90.7% females in cases where the parent was separated or widowed (percentage in relation to the total number of persons with children of the applicable age). With regard to the amount of expenditures spent per year on children 17 years or younger, in cases where the parent had a spouse, approximately 20% of both males and females responded that they spent “less than 100,000 yen,” “100,000 yen to less than 200,000 yen,” and “500,000 yen to less than 1,000,000 yen” each. On the other hand, 9.1% of males and 7.6% of females responded that they spent “more than 1,000,000 yen.” In cases where the parent was separated or widowed, the majority of both men and women responded that they spent “100,000 to 200,000 yen,” followed by “less than 100,000 yen.” Compared to parents with spouses, parents who are separated or widowed displayed a tendency to spend less on children 17 years and younger.

As a method for conducting empirical analysis as to whether a complementary relationship or alternative relationship can be seen between private expenditures and income support for child rearing using parents who have children to whom the abovementioned actual conditions apply, there is a method of linear regression analysis that includes public support in explanatory variables and where expenditures by parents for their children is a dependent variable.

$$(6) \quad T_{it}^{PR} = X_{it}\beta + \alpha_1 Y_{it} + \alpha_2 T_{it}^{PB} + u_{it}$$

Here, T^{PR} represents whether the parent is making expenditures toward their child or the amount of expenditures; X represents the various variables that affect the amount of expenditures towards children (age/gender/level/work status of education of the head of household, member composition of family living together/living separately, health condition, characteristics of inhabited area); Y represents the household income excluding public support; and T^{PB} represents public income support (whether there is such support or the monetary amount of such support) such as childcare allowance. Here, the relationship between public support and expenditures by parents toward their children can be viewed based on the code and magnitude of α_2 . $\alpha_2 < 0$ represents an alternative relationship, and $\alpha_2 > 0$ represents a complementary relationship. In order to distinguish between these two kinds of relationships, it is necessary to efficiently estimate α_2 , which has consistency.

On the other hand, public income support T^{PB} for parents who have a child aged 17 years or younger represents, concretely, the total of (as of 2007 when “Survey on Social Security and People’s Life” was implemented) childcare allowance, livelihood protection, pension benefits (in cases where the parent is a bereaved person or has a disability), and unemployment benefits (in cases where the parent is unemployed). Accordingly, T^{PB} is dependent on the parent’s age, work status, income level, household composition, etc. When these explanatory variables are expressed collectively as Z , the linear regression formula is as follows.

$$(7) \quad T_{it}^{PB} = Z_{it}\pi + v_{it}$$

Generally, when there is either an alternative or complementary relationship, it is thought that between parents' expenditures toward their children and public income support, there is a correlation between error terms u and v based on unobservable effects; in order to obtain the consistent, estimated quantity of α_2 , it is necessary to estimate (1) and (2) as simultaneous equations. To do so, estimations based on the instrumental variable method using an instrumental variable for identification that is included in Z and not included in X is necessary (Note 2). Furthermore, the value of T^{PR} , or expenditures by parents toward their children, is a latent variable that takes on a value above 0 (0 is the threshold value), and estimations using a Tobit model based on an instrumental variable are conducted.

Income support for children consists of childcare allowance, child-rearing allowance, special child-rearing allowance, etc. Income limitations and whether the household is a single-mother household are conditions for such income support, and in cases where the parents' income exceeds the limit or where the household includes a husband and wife, income support for the child does not necessarily become zero, as there is also support unique to local public entities available, but the amount of support decreases significantly. On the other hand, even if the amount of support for expenditures by parents toward their children and for educational fees decreases largely, the decrease is not so large that there would be no more support. Accordingly, as the identifying instrumental variable, a dummy variable that takes on the value of 1 for both cases where the parents' income exceeds the income limit and cases where the parent had separated from or been widowed by their spouse is used.

As dependent variables relating to parents' expenditures on their children, the amount of expenditures spent on children as based on the "Survey on Social Security and People's Life," the percentage of income that is accounted for by this expenditure amount, the percentage of the household's total consumption expenditure that is accounted for by this expenditure amount, educational fees for the child, the percentage of income that is accounted for by educational fees, and the percentage of total consumption expenditure that is accounted for by educational fees are used. At the same time, as a dependent variable for public support, the total of childcare allowance, child-rearing allowance and special child-rearing allowance is used.

As explanatory variables related to parents' expenditures towards their children, the number of children, a dummy variable that takes on the value of 1 for both cases where the provider for the family for when the parent was a child was the father and cases where such a provider was the mother, the parent's educational background (dummy variable that takes on the value of 1 each for being a high school graduate, junior college graduate, and university graduate, with being a junior high graduate serving as a standard), the working hours of the parent, and a dummy variable that

takes on the value of 1 in cases where the parent is enrolled in individual pension, which is a risk aversion in relation to the extent of avoidance of danger and that also indicates their preference for preparing living expenses for after retirement.

As explanatory variables for public support, the number of children, age, dummy variable that takes on the value of 1 for both cases where unemployment allowance thought to be related to aid for the child being provided due to the parent's income following below the income limitations and cases where health conditions are bad, a dummy variable that indicates the state of enrollment in social insurance (takes on the value of 1 in cases where the parent is enrolled in employees' pension and health insurance), a dummy value that takes on the value of 1 in cases of urban areas, and the parent's income are used.

The results of estimations made using these dependent variables, explanatory variables and instrumental variables are shown in Table 2.

Table 2 Basic statistics relating to expenditures by parents toward their children (17 years and younger) and public support

The rate to the number of samples	Experienced in Matrimonial	Female household head(%)	Separation and separation by death	The support hands of the main lives at the time of 15 years old are parents	not healthy	working
(%)	98.2	9.6	10	79.5	13	94.2
The rate to the number of samples	High school graduate	Junior college graduate	University graduate	The insured of a public pension insurance	The insured of a public health insurance	The insured of a corporate pension scheme
(%)	44.2	12.9	36.8	89.6	87.2	20.9
	Age	Number of the children	working hours/per day	Annual income(10 thousand yen)	Public income transfer (subsidy) for the children(monthly amount, 10 thousand yen)	
Average value	41.2	1.9	7.43	444.1	1.1	
Standard deviation	8.07	0.85	81.54	635.24	4.9	
Number of samples=2040						

Source: the author's tabulation based on "Survey on Social Security and People's Life" (2007 version) by the National Institute of Population and Social Security Research

When looking at the estimation results of public support functions, the coefficients for income and age are negative, reflecting that for support, there are income limitations and restrictions to the child's age, and that there is statistical significance. The coefficient for the dummy variable indicating that the parent is enrolled in employees' pension is also significantly negative. On the other hand, the dummy coefficients indicating the number of children and that the area of inhabitation is an urban area is significantly positive. A parent's poor health condition is linked to a decrease in income, which increases the possibility that their income is below the income limitation; this coefficient is significantly negative.

Table 3 Estimation results of expenditures by parents to their children (17 years and younger) and public support

Tobit estimation with instrumental variables							
Dependent variable	The expenditure for children	The education expense for children	The share of expenditure for childrento household income	The share of education expense for childrento household income	The share of expenditure for childrento household consumption	The share of education expense for childrento household consumption	
Explanatory variabl Public income transfer(subsidy) for childresn	-5.399319 (-1.27)	-0.5406119 (-0.95)	0.0081025 *	0.012157 ***	0.0053542	0.003544 ***	
Number of children	77.63396 *** (6.46)	16.25191 *** (9.74)	0.0439333 *** (3.59)	0.0383493 *** (8.50)	0.0267477 * (1.85)	0.0373553 *** (9.21)	
Experienced in	11.42782 (0.13)	-17.33176 (-1.47)	-0.0543713 (-0.61)	-0.0224776 (-0.70)	-0.1055696 (-1.02)	-0.0604866 ** (-2.11)	
The support hands of the main lives at the time of 15 years old is his/her father	10.78507 (0.52)	-2.581832 (-0.88)	0.0053791 (0.25)	-0.002719 (-0.34)	0.0190277 (0.75)	-0.0079457 (-1.12)	
The support hands of the main lives at the time of 15 years old is his/her mother	171.8494 *** (6.66)	2.940652 (0.83)	0.1765363 *** (6.73)	-0.006936 (-0.72)	0.1740787 *** (5.59)	0.0124736 (1.44)	
Working hours	-0.6357856 *** (-5.06)	-0.1036499 *** (-5.94)	-0.0002071 * (-1.62)	-0.0002585 *** (-5.47)	0.000064 (0.04)	-0.0002121 *** (-4.99)	
High school graduate	216.4603 *** (4.75)	29.52381 *** (4.58)	0.2521448 *** (5.45)	0.0707015 *** (4.07)	.3507764 *** (6.28)	0.0806645 *** (5.14)	
Junior college graduate	242.3027 *** (4.72)	40.70841 *** (5.63)	0.3031293 *** (5.81)	0.0961338 *** (4.93)	0.4020285 *** (6.41)	0.0952491 *** (5.40)	
University graduate	338.8224 *** (7.23)	44.37415 *** (6.69)	0.2833323 *** (5.95)	0.0799261 *** (4.47)	0.4287692 *** (7.46)	.1011708 *** (6.26)	
The insured of a corporate pension	67.46244 *** (2.76)	1.765549 (0.52)	0.0274037 (1.10)	-0.0029446 (-0.32)	0.0360183 (1.22)	0.0018237 (0.22)	
constant	-158.4716 * (-1.64)	-19.382 (-1.47)	0.1078783 (1.10)	-0.0476052 (-1.33)	0.0217068 (0.19)	-0.0094807 (-0.30)	
Estiation of endogenous variables by instruments							
Dependent variable	The expenditure for children	The education expense for children	The share of expenditure for childrento household income	The share of education expense for childrento household income	The share of expenditure for childrento household consumption	The share of education expense for childrento household consumption	
Explanatory variabl Number of children	0.2663745 *** (2.36)	0.2685858 *** (2.38)	0.2725964 ** (2.41)	0.2724465 ** (2.41)	0.2723422 ** (2.41)	0.2702257 ** (2.39)	
Experienced in	-1.237304 (-1.54)	-1.248028 (-1.55)	-1.27562 (-1.59)	-1.306737 * (-1.63)	-1.274909 (-1.59)	-1.269956 (-1.58)	
The support hands of the main lives at the time of 15 years old is his/her father	4.378178 ** (2.22)	0.4346968 ** (2.20)	0.4264662 *** (2.16)	0.4150625 ** (2.10)	0.4275663 ** (2.16)	0.4299341 ** (2.18)	
The support hands of the main lives at the time of 15 years old is his/her mother	.5193185 ** (2.13)	0.5089839 ** (2.09)	0.4842435 *** (1.99)	0.4662976 * (1.92)	0.486628 ** (2.00)	0.4926071 ** (2.03)	
Age	-0.0693283 *** (-3.70)	-0.0716107 *** (-3.85)	-0.0754949 *** (-3.99)	-0.0753102 *** (-4.17)	-0.0754555 *** (-3.97)	-0.0729276 *** (-3.92)	
Female(dummy variable)	8.036621 *** (24.00)	8.048506 *** (24.12)	8.091504 *** (24.38)	8.114057 *** (24.59)	8.089236 *** (24.37)	8.104011 *** (24.43)	
Insured in public pension(dummy variable)	-1.078432 *** (-3.06)	-1.037244 *** (-3.00)	-0.8687537 (-2.43)	-0.5643637 *** (-1.66)	-0.8820813 ** (-2.48)	-0.8650726 * (-2.46)	
Insured in public health insurance(dummy	0.2962652 (0.97)	0.3320193 (1.09)	0.370466 (1.21)	0.306811 (1.04)	0.3658167 (1.19)	0.3175312 (1.04)	
not healthy	0.8491522 *** (3.05)	0.8521339 *** (3.06)	0.833551 *** (2.99)	0.848693 *** (3.15)	0.8426298 *** (3.02)	0.8170692 *** (2.93)	
household income	-0.000251 (-0.17)	-0.000179 (-0.12)	-0.0000154 (-0.10)	-0.0001107 (-0.76)	-0.000077 (-0.02)	0.000024 (0.02)	
constant	3.538508 *** (2.73)	3.606857 *** (2.78)	3.697081 *** (2.84)	3.621635 *** (2.84)	3.696729 *** (2.84)	3.591118 *** (2.77)	
Number of samples	2040	2040	2040	2040	2040	2040	
log likelihood	-19774.151	-14688.372	-7162.3977	-5546.0248	-7484.9988	-5556.6794	
Wald test chi2(1)	1.48	1.33	1.20	33.68	0.99	2.04	

Note 1: * indicates 1% level, ** indicates 5% level, *** indicates significance at 1% level (two-tailed test).

Note 2: In estimation of endogenous variables, explanatory variables include working time as well as dummy variables for being a high school graduate, junior college graduate, university graduate or higher, and enrollment in individual pension insurance, but these were not statistically significant. In this table, estimation results of endogenous variables are indicated upon omitting the results of these variables.

Source: the author's estimation based on "Survey on Social Security and People's Life" (2007 version) by the National Institute of Population and Social Security Research

With regard to estimation results related to expenditures by parents toward their children using the amount of public support, which was estimated using public support functions indicating such estimation results, as an explanatory variable, when the dependent variable is the amount of expenditures spent on the child and the amount of educational expenditures, the coefficient for the amount of public support is not statistically significant. In relation to this, when the percentage of a parent's income and the percentage of total consumption expenditure that is accounted for by expenditures spent on the child and educational expenditures serve as dependent variables, the coefficient for the amount of public support is significantly positive. When looking at other explanatory variables, the number of children, the dummy variable that represents cases where the provider for the parent's family when the parent was a child was the father, and the dummy variable that indicates that the parent has an advanced educational background in comparison to the standard of being a junior high school graduate are significantly positive. Although the dummy variable for enrollment in individual pension is statistically positive, it is not statistically significant. This reflects that there are many cases where, when the parent is separated or widowed, they struggle to make a living and the amount of expenditures towards their child decreases, and the coefficient is negative and significant.

Normally, expenditures towards children are considered as being a normal commodity, and when the parent has a low income, the amount of expenditures towards their child and the amount they spend on educational fees are low; when the parent's income is high, such amounts are high. On the other hand, the amount of public support for the child becomes larger when the parent has a low income, and there is a tendency for the amount of expenditures towards the child and the amount spend on educational costs to be lower when there is public support. As a result, when the amount of expenditures towards a child and the amount spent on educational costs are used as dependent variables, the results are such that the coefficients are not significant, as demonstrated in Table 3. On the contrary, the reason why the coefficient for public support becomes significantly positive when the percentage of income that is accounted for by expenditures on the child and on educational costs and the percentage of total consumption expenditure that is accounted for by expenditures on the child and on educational costs are used as the dependent variables is that the lower a household's

income, an effect is yielded where the percentage of income and living costs accounted for by expenditures on the child and on educational costs is higher, indicating that public support functions in a way with respect to children where, even if income is relatively low, the child's lifestyle improves.

Today, there are concerns regarding child allowance as to whether such allowance is used as intended. With regard to this point, the above empirical analysis indicates that when one is given such support for the purpose of his/her child, the parent is allocating such support towards expenditures on the child, and thus, it is thought that child allowance functions to fulfill this purpose.

3 Impacts by economic support by parents toward children who are of a working age and social security benefits

3-1 Impact of economic support by parents towards children of a working age on motivation for employment

In the previous section, model analysis and empirical analysis were conducted, based on perceiving the relationship between self-help and public assistance as the relationship between expenditures by parents toward their child and public income support, targeting cases where the child is of a young age. The relationship between self-help and public assistance may be either a complementary relationship or an alternative relationship, even when the child has graduated from school and is of an age for entering the labor market. When the parent is altruistic and is providing aid in relation to the risk of the child becoming unemployed or struggling to make a living, the relationship between self-help and public help is complementary. On the contrary, even if, for example, the parent is altruistic, when there is a risk of the parent's income decreasing due to unexpected unemployment or retirement due to advancing age, in cases where the child is directly faced with a decrease in income, it is possible that the parent does not provide economic support as self-help due to expectations for an unemployment allowance or other public income support, and the relationship between self-help and public help is an alternative one.

With regard to the relationship between work/labor supply and public assistance, according to the theory behind job searches, unemployment allowance enables for an unemployed person to seek employment until they come across a better job opportunity, and it is known that unemployment allowance has the effect of prolonging the unemployment period and lowering the employment rate. In addition, it has been proven that public pension benefits have the effect of lowering the employment rate of elderly persons. In such a way, public assistance in the form of public income support has an impact of weakening the incentives of people to work. In order to compare and analyze the relationship between self-help and public assistance, it is necessary to analyze the impacts on work/labor supply, even by self-help. This is because clarifying the impacts of support for low incomes on incentives is an important topic in the field of economics.

When looking at the relationship among self-help, public assistance, and incentives, in cases

where the child is of a working age, when there is too much economic support for the child, it is possible that the incentives of the child to work are lowered. Based on the premise that the parent is altruistic in relation to the child, the relationship among self-help, public assistance, and incentives (taking into consideration the respective impacts of unemployment allowance and private transfer of revue) are examined based on model analysis.

When children (not students and 18 years or older) enter the work force, they are divided into two conditions: cases where they obtain a high income y_H (regular employment) and cases where they obtain a low income y_L (non-regular employment). The probability of a low income is represented by $P(e)$ and the probability of a high income is $1-P(e)$; e represents the work effort of the child (student; 18 years or older), and $dP(e)/de < 0$. It is hypothesized that by increasing the work effort, it is possible work under better conditions and to earn a higher income.

With regard to the utility function of the child U_c , it is hypothesized that $U_c = V_c(xc) - v(e)$, since the utility based on consumption of goods and services $V_c(xc)$ and disutility of work effort ($-v(e)$) are additively separable. Here, the marginal utility of goods/services and work effort is hypothesized as $\partial V_c / \partial xc > 0$, $\partial v(e) / \partial e > 0$.

It is hypothesized that in cases where the child has a low income, parents make more expenditures toward their child than they would if their child has a high income (transfer of revenue and shouldering of living expenses such as food costs and utility charges). In other words, if a parent's expenditure toward their child when the child has a high income and a low income is represented by T_H and T_L , respectively, then $T_L > T_H$.

Children's work behavior is determined based on the understanding that there will be expenditures from the parent in accordance with the state of the child's income, and thus, the work effort of the child (e) is determined by maximizing the following kind of expected utility under budget constraints that include expenditure from the parent and unemployment allowance (B_u).

$$(7) \quad P(e) [V_c(Y_L + T_L + \rho_L B_L)] + (1 - P(e)) [V_c(Y_H + T_H + \rho_H B_H)] - v(e)$$

Here, the probability of unemployment is lower for cases where one receives a high income as compared to cases where one receives a low income, and it is hypothesized that unemployment allowance is large, since the period of unemployment up until employment is long. In other words, $\rho_L > \rho_H$, and $B_L < B_H$.

The following formula is obtained from the first-order condition of maximization of the child's expected utility.

$$(8) \quad P'(e)(V_L - V_H) = v'(e)$$

Here, there is the relational expression of Eq. (8-2),

$$(8-2) \quad V_j = V_c c(Y_j + T_j + \rho_j B_j) \quad (j = H, L), \text{ and } P'(e) < 0, v'(e) > 0, \text{ justifying Eq. (8-3),}$$

$$(8-3) \quad V_L < V_H$$

This Eq. indicates that the child's marginal utility for work effort becomes equal to the expected utility for marginal income increases that is obtained through a decrease in the probability of the case that a lower income is obtained.

Based on these conditions, the relationships between the child's work effort and expenditures by the parent toward the child as well as unemployment allowance can be determined based on the following Eq.s.

$$(9) \quad \partial e / \partial T_L = -[P'(e)V_L] < 0, \quad \partial e / \partial T_H = [P'(e)V_H] > 0,$$

$$(10) \quad \partial e / \partial B_L = -\rho_L [P'(e)V_L] < 0, \quad \partial e / \partial B_H = \rho_H [P'(e)V_H] > 0$$

Here, based on the inequality expression ($V_L < V_H$), the inequality expression ($V_L' > V_H'$) based on the principle of diminishing marginal utility, and the above formulas is established.

$$(10-2) \quad \partial e / \partial T_L > \partial e / \partial T_H$$

However, as there is such a relationship of Eq.(10-3) ,

$$(10-3) \quad \partial e / \partial T_j = \partial e / \partial y_j \quad (j=L, H),$$

in both cases of low income and high income, when Eq.(10-4),

$$(10-4) \quad dy = dy_L (=dT_L) = dy_H (=dT_H),$$

is used for the marginal effects of expenditures by the parent to the child of the same amount on work effort, the following Eq. (10-5) is established.

$$(10-5) \quad \partial e / \partial y < 0$$

Accordingly, the work effort of the child can be expressed as a function of unemployment allowance and expenditures by the parent in both cases of low income and high income. In other words,

$$(11) \quad e = e(Y_L + T_L + \rho_L B_L, Y_H + T_H + \rho_H B_H)$$