

## Journal of Student Financial Aid

---

Volume 44 | Issue 2

Article 4

---

11-7-2014

# A Comparative Study on Need-Based Aid Policy in Higher Education between the State of Indiana and Taiwan

Ching-Hui Lin

*Indiana University - Bloomington*, [chclin@indiana.edu](mailto:chclin@indiana.edu)

Don Hossler

*Indiana University Bloomington*, [hossler@indiana.edu](mailto:hossler@indiana.edu)

Follow this and additional works at: <https://ir.library.louisville.edu/jsfa>

Part of the [Higher Education Commons](#), [Higher Education Administration Commons](#), and the [International and Comparative Education Commons](#)

---

### Recommended Citation

Lin, Ching-Hui and Hossler, Don (2014) "A Comparative Study on Need-Based Aid Policy in Higher Education between the State of Indiana and Taiwan," *Journal of Student Financial Aid*: Vol. 44 : Iss. 2 , Article 4.

Available at: <https://ir.library.louisville.edu/jsfa/vol44/iss2/4>

This Research Article is brought to you for free and open access by ThinkIR: The University of Louisville's Institutional Repository. It has been accepted for inclusion in *Journal of Student Financial Aid* by an authorized administrator of ThinkIR: The University of Louisville's Institutional Repository. For more information, please contact [thinkir@louisville.edu](mailto:thinkir@louisville.edu).

---

# A Comparative Study on Need-Based Aid Policy in Higher Education between the State of Indiana and Taiwan

## **Cover Page Footnote**

The authors wish to thank four anonymous reviewers for their detailed and generous feedback on earlier versions of this manuscript.

# A Comparative Study on Need-Based Aid Policy in Higher Education between U.S. State of Indiana and the Nation of Taiwan

By Ching-Hui Lin and Donald Hossler

Ching-Hui Lin is a research associate at Indiana University Bloomington. Donald Hossler is director of the Center for Postsecondary Research and professor of Educational Leadership and Policy Studies at Indiana University Bloomington.

*The question of how the government can best support access to postsecondary education has become a critical issue for education policymakers around the globe, as the practice of cost sharing for funding postsecondary education has been more widely adopted. In this context, this study explores the approaches to implementing current need-based financial aid policies in higher education in Indiana and Taiwan using G.Z.F. Bereday's (1964) comparative method as the framework. Using a comparative cross-national perspective, the authors explored cost sharing, Rawls' theory of social justice, and the economic principles of horizontal and vertical equity.*

*This review revealed that need-based aid programs in both Indiana and Taiwan were founded on the principle of vertical equity, which aims to equalize educational opportunity for low-income students and minorities. However, the increased popularity of cost sharing and its consequent heavy burden on students from low-socioeconomic backgrounds have made it necessary to reexamine the financial aid systems intended to hold open the door of opportunity for these students. These findings have implications for examining financial aid policy within a global context, as well as asserting the value of cross-national comparisons in postsecondary education. Governments and postsecondary institutions should examine the effects of financial aid systems on college attendance and completion from a longitudinal perspective to allow for a better understanding of the impact of policy changes and to prevent further erosion educational opportunities for students who aspire to a college education.*

**Key Words:** *Financial aid policy, need-based aid, equity and access, cost sharing*

External economic and political forces in the 21<sup>st</sup> century have been producing a shift in the emphasis of government investment in higher education in many countries. This shift has brought about a change in funding patterns toward privatization and increased financial pressure on postsecondary educational institutions (Johnstone, 2006a; Rhoades and Slaughter, 2004). Most countries have not been able to increase the number of publically funded institutions and maintain the same level of subsidy per student enrolled. Thus, postsecondary institutions have turned to cost sharing as a solution for a cost-effective relationship between their revenues and accountability (Johnstone, 2006b).

Furthermore, the rise of globalization<sup>1</sup> has had a substantive impact on policy information related to the practice of cost sharing and privatization (Johnstone and Marcucci, 2007), resulting in the increasingly common engagement of policy makers and scholars of postsecondary education in what Phillips and Ochs (2004) have called *policy borrowing*. As the term implies, policy borrowing refers to the practice, by domestic policy makers or researchers seeking to resolve a specific problem, of considering how others have resolved similar problems (Usher and Medlow, 2010). Cost sharing is a direct outcome of this shift, and to date, the current trend of shifting of financial responsibility to students and their families, by enlarging the burden imposed on them (Johnstone, 2009; Chou, 2010; St. John, 2003), has resulted in greater social inequality around the globe (Forsey, Davies, and Walford, 2008). Though long a practice in the United States, more recently it has become an issue in many countries (Callender, 2006; Chan, 2011; Johnstone, 2006a) as they have developed new approaches to tuition, financial aid, and student loans that depend on cost sharing (Hansen, 2008). Thus, it has become possible to compare various approaches to need-based financial aid on a global scale and facilitate exchange of information and strategies. The present study is a comparative analysis of the impact of need-based financial assistance policies in the U.S. state of Indiana and the nation of Taiwan. While it may seem unusual to compare a sovereign nation with a single state within a country, every U.S. state has its own set of financial aid programs and policies, so it is appropriate to compare Indiana and Taiwan.

In the United States, where there is the largest body of research on the impact of cost sharing, the average increase in tuition costs at public four-year postsecondary institutions is 5.2% per year beyond inflation, and rising tuition levels have led students and families to search for new ways to finance their education (College Board, 2012). In Taiwan, although tuition costs fluctuate less than in the United States due to Taiwanese government control, there has also been a steady increase in tuition rates. Between 1996 and 2011, higher education tuition costs rose by 55% after adjusting for inflation (Department of Statistics, 2012). In many countries, because income levels have not kept pace with rising tuition costs, many families, particularly low-income families, have difficulty meeting the required family contribution to college costs (Long and Riley, 2007; Yang, 2007). Given the substantial shift of responsibility for financing higher education away from government to students and their families (Zumeta, 2004) and the rise of merit-based rather than need-based aid, it is important to look carefully at the impact of need-based financial aid schemes on student access to postsecondary education and the promotion of social justice.

The purpose of this study is to compare the approaches to implementing current need-based financial aid policies in higher education in Indiana and Taiwan. Taking a cross-national perspective on such issues will help other countries dealing with the issue of increasing demand for higher education alongside diminishing financial resources, and will support productive policy borrowing (Phillips and Ochs, 2004). Both Taiwan and Indiana have made substantial investments in student aid to help offset the rising costs of college and equalize postsecondary access for low-income

students and disadvantaged minorities, and each has employed cost-sharing mechanisms for many years. In the last decade, access to postsecondary education has come to refer not only to the ability of low-income students to matriculate into postsecondary education, but also to having a reasonable chance of graduating (Lumina Foundation, 2009). Therefore, in the present study, we examine the practices of financial aid schemes between Taiwan and Indiana through the lens of Rawls' (1971) *Theory of Social Justice*, which provides a basis for rethinking how student financial aid policy in education might equalize postsecondary opportunity across different groups in society.

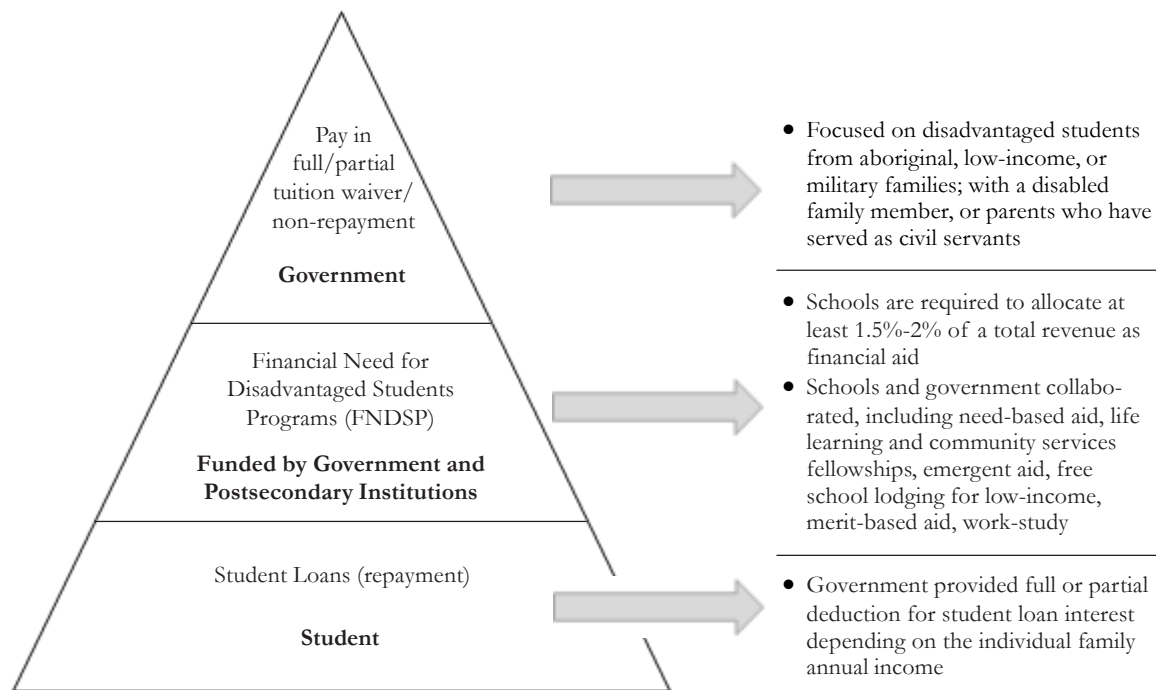
## Literature Review

### *Policy Context in Taiwan and the State of Indiana*

In Taiwan, prior to 1990, the Ministry of Education and taxpayers shared equally the majority of higher educational costs, and four-year public institutions were able to feature relatively low-cost tuition. However, since 2000, under the combined influence of globalization and a market economy, “[h]igher education moved from primarily being seen as a public good to being seen as a private good” (Hossler, 2006) because the individual benefits from higher education and therefore should pay. As a result, colleges and universities have become increasingly reliant on tuition costs as their revenue source, rather than taxpayer support (Tai, 2008). The policy objectives for financial aid in postsecondary education in Taiwan are aimed at both meeting the financial needs of students from low-income families and rewarding academic merit. To achieve these objectives, the Ministry of Education (MOE) distributes large subsidies to both public and private institutions. With regard to need-based aid, the government provides substantial scholarships through various channels, including tuition waivers, the Financial Need of Disadvantaged Student Program (FNDSP), and student loans. The hierarchical relationships among those channels can be conceptualized as a pyramid (see Figure).

At the top of the pyramid is the government's grant-based aid for students who are from aboriginal<sup>2</sup> or low-income families, are disabled or have disabled caregivers, or are from families who have performed military or government service. To determine the amount of financial support for members of a specific group, the MOE collects information on family size, annual income and assets such as savings accounts and earned interest, the student's earnings and assets, the number of family members enrolled in college, and the age of the oldest parent. The middle of the pyramid, FNDSP, which is funded primarily by the government in collaboration with higher education institutions, includes need-based aid, fellowships, emergency aid, free school lodging, and work-study. At the bottom are subsidized and unsubsidized student loans, which account for the greatest amount of financial aid. The government fully supports grants at the top of pyramid, collaborates with higher education institutions through FNDSP to provide need-based grants in the middle of the pyramid, and subsidizes interest on repayable loans depending on individual family annual income at the bottom of the pyramid. Students from low-income backgrounds commonly apply for loans to pay for tuition costs for the first semester of college. Once they have successfully performed academically,

**Figure. Concept of Financial Aid Policy on Higher Education in Taiwan**



they are eligible for grant aid in the following semester. Nonetheless, the grant aid they receive may not cover college expenses, resulting in the need to take out further supplementary loans. This financial aid structure is very different from that found in Indiana.

Indiana is widely considered to have the most progressive need-based state financial aid program in the United States (St. John, Musoba, and Simmons, 2003). In particular, its Twenty-First Century Scholars Program (TFCS) is designed enhance college access and student persistence, which has been researched extensively (St. John, Hu, Simmons and Musoba, 2001; St. John et al., 2005 St. John, Gross, Musoba and Chung, 2005; Toutkoushian, Hossler, DesJardins, McCall, and Canche, 2013). Initiated in 1990 through legislation, TFCS was the first state program to provide scholarships sufficient to cover in-state tuition for high-need students at Indiana public colleges and universities or its equivalent private institutions (St. John et al., 2005). To date, approximately 15,314 students have received \$54.5 million in TFCS awards (SSACIB, 2012). The program combines early awareness with a substantial need-based scholarship to motivate students from low-socioeconomic backgrounds to prepare themselves academically. TFCS not only supplements student aid, it also provides support services to parents, students, and communities (St. John et al., 2003). The program ensures coverage of financial need for qualified low-income students who pledge to maintain certain academic levels in middle and high school enroll in higher education, and apply for student aid. This

encourages students to find and pursue successful pathways to college. Research overall has shown that the program has enhanced postsecondary access and has also improved college persistence for low-income students (St. John et al., 2002; St. John et al., 2005).

Thus, both Indiana and Taiwan have programs specifically targeting disadvantaged populations. However, while both the TFCS and the FNDSP have been implemented to achieve similar goals of equal access and college affordability for students from low-income backgrounds, they differ in where they place emphasis. Therefore, the present study locates the significance of need-based financial aid policy in the global context by comparing policies in Indiana and Taiwan, and examines primary features of both programs through the lens of equity, drawing on John Rawls' theory social justice (St. John, 2003).

### *Cost Sharing in Higher Education*

Higher education costs represent the largest proportion of the total education budget in most countries, and the practice of cost sharing—viewed as a vehicle to minimize fiscal pressure and generate revenues to support postsecondary education while expanding access—has become a worldwide trend. The concept of cost sharing in higher education has been defined as the shift of the cost burden from the government or taxpayers to students and their families (Johnstone, 2000). The main debate in cost sharing is whether some proportion of tuition costs should be assumed by students and families and, if so, how much (Johnstone, 2009). The patterns of cost sharing vary across countries (Johnstone, 2000). The United States maintains a competitive market with tuition costs that vary by state and by postsecondary sector. In recent decades, higher education expenses paid by the government using tax revenues have been declining, leading to increasingly higher proportions of costs assumed by individuals and families (Altbach, Gumpert, and Berdahl, 2011). This revenue squeeze has resulted in increases in tuition costs that surpass inflation rates, leading to an ever-heavier cost burden on students and their families. At private institutions, financial aid is supported by higher tuition costs, again resulting in rising costs of attendance (Sanyal and Johnstone, 2011). In Taiwan, public institutions represent the most selective postsecondary sector and generally feature low tuition costs as well as differential rates determined by the costs, quality, and popularity of specific programs. However, nearly 80% of low-income students are enrolled in less-selective but more costly private institutions due to their limited access to academic preparation (MOE, 2009). Individuals and families are responsible for substantial proportions of tuition costs, with the assistance of need-based financial aid for low-income families.

In the United States, higher education continues to experience flat or declining state tax support, resulting in fiscal austerity that has taken institutions further away from full subsidization of tuition costs (Johnstone and Marcucci, 2010). As a result, policy makers are developing various strategies to achieve greater efficiency in meeting the growing demands for higher education without increasing the educational budget. For instance, some institutions approach cost cutting by restructuring

administration units to maintain a viable balance between revenues and accountability (Sanyal and Johnstone, 2011). Impacted by globalization, many nations are following the trend toward greater cost sharing and privatization, which may be detrimental for students from low-income socioeconomic backgrounds in the pursuit of a college education (Johnstone and Marcucci, 2010). Indeed, the policy shift of higher education costs from government and taxpayers to students and their families, along with market-driven rises in tuition costs and fees, is pervasive and controversial as it can have a demonstrable impact on college participation and students' commitments to degree attainment. Within this policy shift, financial aid plays an increasingly significant role in supporting higher educational equity, and therefore need-based financial aid schemes must be considered carefully (Johnstone, 2006b).

### *John Rawls' Theory of Social Justice*

John Rawls' theory of justice develops Aristotle's idea of equity, which is "Equally treat the equal, unequally treat the unequal" (Hunt, 2007). Rawls' social justice theory distinguishes two principles—equal treatment and equity of opportunity—that provide a beginning step for examining the role of government in promoting student access to postsecondary education. The first principle, equal treatment, is also the first priority. That is, "Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all" (Rawls, 1971, p. 391). This proposition assumes that, in a free market society, "all have at least the same legal rights of access to all advantaged social positions" (Rawls, 1999, p. 62). Applied to higher education, it means that all college-qualified students, regardless of their socioeconomic backgrounds, should be given equal access to college. Nevertheless, student access is affected by such disadvantages as disparities in quality of prior education and socioeconomic status, which suggests that the educational system remains unequal in any society (St. John et al., 2003). The first principle fails to provide sufficient foundation for overcoming disparities in circumstances that affect some students' access to college. Accordingly, the second principle, "Social and economic inequalities are to be arranged...to the greatest benefit to the least advantaged... [and] attached to offices and positions of fair equality of opportunity" (Rawls, 1971, p. 391), introduces the shared responsibility from one generation to the next through taxation in order to maintain a just social system. That is, taxpayers are willing to pay for financial aid and loans that provide more equitable opportunities across generations for students from low-socioeconomic backgrounds (St. John et al. 2003). Higher education is viewed as the social escalator for upward mobility of poor and disadvantaged students to achieve social justice (Jencks and Reisman, 1977). Conceptualized by Rawls' social justice as fairness, financial access to schooling is considered as the way to reduce the disproportionalities among different socioeconomic backgrounds.

In sum, given the limitations of a free market in a society, equal right of access to postsecondary education based on academic merit fails to sufficiently facilitate the second principle, which calls for accommodation for unequal socioeconomic backgrounds and prior academic preparation.



Because taxes support public funding of higher education, it is incumbent upon the government, acting through higher education institutions, to implement financial aid schemes that equalize educational opportunities and promote equity for students in the pursuit of higher education (St. John, 2003). As suggested by Rawls' notion of distributive justice, financial aid provided by government and institutions to some extent equalizes educational opportunities for those from low-socioeconomic backgrounds and the marginalized groups who would attend college. Both governmental and institutional policy makers in the USA and Taiwan should not only establish a just principle but also take an active role in assisting students to persist in accordance with their individual circumstances.

### *Horizontal Equity vs. Vertical Equity*

In addition to Rawls' theory of social justice, this study draws on the economic principles of horizontal and vertical equity, as they have been defined by The American Association of State Colleges and Universities (AASCU), to examine postsecondary access in the United States. "Horizontal equity refers to the similar treatment of people in similar situations; vertical equity involves treating people in different circumstances in approximately different ways" (AASCU, 2000, p. 7). To establish horizontal equity, the state of Indiana considers a family's expected family contribution (EFC) and the Taiwan government regards family annual income and assets as the baseline for determining aid eligibility, regardless of individual circumstances, such as the number of dependents in college, number of people supported by the family's income and assets, and whether the student maintains a threshold GPA (Hatfield, 2003; MOE, 2012). These circumstances are taken into account to establish the principle of vertical equity.

In fact, the concept of equity as it relates to opportunity in higher education is complex because of wide gaps among different socioeconomic backgrounds in both Taiwan and Indiana (Altbach, Berdahl, and Gumport, 2011; Tai, 2008). For instance, the report *Measuring Up 2008*, issued by The National Center for Public Policy and Higher Education, reveals that approximately 91% of U.S. high school graduates from high-income families enrolled in four-year postsecondary institutions, 78% from middle-income families, and only 52% from low-income families. This report also indicates that disparities in college access are correlated closely with ethnicity. In Taiwan, approximately 68% of low-income students are enrolled in private institutions with high tuition costs (MOE, 2010), and the number of students from both low- and middle-low income backgrounds who enrolled private institutions was four times the number of those in public institutions, which suggests a wide gap between affluent students and those from less privileged backgrounds.

The practice of merit-based scholarships is closer to the principle of horizontal equity because it is based on students' achievements without taking into account family income or the ways that students' performance is demonstrated and funds are distributed differ from institution to institution (Redd, 2004; AASCU, 2000). The intention of merit-based scholarships may be to increase affordability of a college education while

promoting better academic performance. Nonetheless, research suggests that students from low-income families and disadvantaged minorities tend to be constrained not only by their financial circumstances but also by restricted academic preparation, resulting in high aspirations but low academic achievement compared to their more affluent counterparts (St. John, Paulsen, and Carter, 2005), who have better chances of receiving merit-based aid. The notions of horizontal and vertical equity provide the fundamental perspectives from which to examine whether aid dollars are distributed equitably to ensure higher educational opportunities regardless of ethnicity, income, and socioeconomic status.

## **Methodology**

In the field of comparative social science, qualitative rather than quantitative methods, which force the disaggregation of cases to examine relationships among specific dimensions, are often deemed more appropriate for capturing the complexities of human experience. Thus, the best way to investigate these complexities is often to directly examine the differences and similarities between each case when viewed as a whole. This study used G.Z.F. Bereday's (1964) method involving description, interpretation, juxtaposition, and finally comparison as the methodological framework to examine need-based student aid policies in Indiana and Taiwan. First, we collected and interpreted pedagogical information for both countries. Additional data sources included policy statements and government reports by the Ministry of Education (MOE) of Taiwan and the State Student Assistance Commission of Indiana (SSACI). Next, we determined the framework for juxtaposing the two sets of information. Finally, we compared selected problems and the relevance of educational policy in both settings.

## **Implementation of Need-Based Aid Policy in Indiana and Taiwan**

This section reviews and compares the different emphases and priorities of a primary need-based program in each setting: the Twenty-First Century Scholars Program in Indiana and the Financial Need for Disadvantaged Students Program in Taiwan.

### *The Twenty-First Century Scholars Program (TFCS) in Indiana*

The TFCS is designed to increase high school graduation and college enrollment rates for low-income students. Inspired by the success of Eugene Lang's I Have a Dream Foundation, which serves low-income students in New York City schools, Indiana Governor Evan Bayh created the TFCS in 1990 (St. John and Chung, 2004). Meanwhile, in order to raise awareness of the value of higher education, the SSACI also granted funding for programs such as Parents Projects and Gaining Early Awareness and Readiness for Undergraduate Study to provide additional support for eligible students to pursue postsecondary education (SSACIa, 2012). When students sign up for the TFCS, they and their parents are immediately linked to a network of support sites that provides a range of ongoing assistance.

By 2010-11, Indiana's state financial aid program ranked as the sixth largest in the USA, and it remains primarily focused on need-based aid,

which is not true of all states (Johnson and Yanagiura, 2012). Currently, student aid, including TFCS, constitutes the major component of the state's budget to promote college attendance and completion. In 2009-10, approximately 9,468 high school students signed up for the program, of whom 6,390 students made the pledge shown in Table 1 (Indiana Commission for Higher Education, 2012), and the number of new students signing up continues to increase. TFCS aims to reduce high school dropout rates, decrease alcohol and drug use, increase college enrollment and completion rates, and improve the quality of life as well as individual economic productivity of low-income students. In order to benefit from this program, which guarantees coverage of undergraduate tuition costs for four years at any public college or university in Indiana, high school students need to sign a pledge (St. John, Musoba, and Simmons, 2003; St. John, Gross, Musoba, and Chung, 2005), described in Table 1.

The TFCS, with its low academic threshold, places first priority on assisting low-income students (St. John et al., 2003). To be considered low-income, eighth-grade students must be eligible for free or reduced-priced lunches or free or reduced-priced textbooks. The Core 40 diploma, described as "the academic foundation students need to succeed in college" (Indiana Department of Education website) became the minimum admission standard in the program for students who entered high school in 2007. It is worth noting that more recently the state has made some

**Table 1. Requirements Made by TFCS Participants and Commitments Made by the State of Indiana**

---

Students participating in TFCS pledge to:

- Graduate from an Indiana high school.
- Complete high school with a Core 40 curriculum diploma.
- Maintain at least a 2.0 grade point average (GPA) in high school.
- Refrain from taking illegal drugs and alcohol, and engaging in related activities.
- Apply for admission and enroll full time at an eligible Indiana college or university within two years after completing high school.
- Apply for financial aid in the senior year of high school.

When scholars make the pledge, the state of Indiana commits to:

- Via early intervention strategies and grant aid, encourage scholars to pursue a college preparatory curriculum.
  - Provide a holistic network of support services for the qualifying scholars, such as academic tutoring, mentoring, parents' campus visiting, and career advising.
  - Disseminate relative information on both higher education and high school requirements.
  - Pay in full each scholar's tuition and fees at any public Indiana college or the equivalent cost toward full tuition at an independent college or proprietary school.
-

changes. It has added some merit sensitivity in that students who take a more rigorous college curriculum are eligible for higher levels of financial aid. Furthermore, new GPA requirements to indicate academic progress were initiated in Indiana for scholars who enrolled in college in 2012. Students must maintain a minimum cumulative GPA of 2.0 on a 4.0 scale until graduation (State Student Assistance Commission of Indiana, 2012b).

### *The Financial Need for Disadvantaged Students Program (FNDSP) in Taiwan*

Prior to the 1999 academic year, MOE set the cost of attending an institution of higher education (both public and private) based on single rate. In 1999, MOE authorized the “Flexible Adjustment of Tuition and Fees Plan” to allow higher education institutions to set their tuition and fees according to the actual and regular operation costs. The basic principles of the plan were intended to assist economically disadvantaged students while fairly reflecting the educational costs of postsecondary education (MOE, 2009). While not mandating an allocation of funds for student financial aid, the policy implies that institutions should distribute a proportion of funds to student financial aid and disseminate to the public relevant student aid information such as financial aid availability and deadlines. Because public universities are heavily dependent on government funding for the amount of aid they have for distribution, the number of students applying for the aid affects how much financial support each recipient will get per year.

Furthermore, resource disparities and social class inequalities related to the type of institution students attend are widening. Nearly 80% of the students enrolled in private institutions are low-income, compared to approximately 20% of the students enrolled in public institutions (Department of Statistics, 2009). In fact, students from privileged socioeconomic backgrounds are far more likely to be admitted to elite public institutions and incur lower tuition costs (Chou, 2010; Tai, 2008; Yang and Chen, 2009). If rising costs, especially in private institutions, are not coupled with adequate financial support, the likelihood of low-income students and minorities completing college will be reduced (Yang and Chen, 2009). The ultimate goals of FNDSP are to equalize educational opportunities for low-income students and achieve social justice in the long term (MOE, 2008). It is essentially a need-based program with four general components, as described in Table 2.

It is worth noting that need-based aid comprises the largest portion of support for low-income students in the FNDSP. The uniquely Taiwanese aspect of the FNDSP, that most low-income students must take out loans because there is no need-based aid for the first semester, raises an important question: Is this policy unfair to low-income students or does it motivate them to be more focused and earnest in their studies? This is an important difference that separates the FNDSP program from Indiana’s TFCS. Another difference is that the latter has a strong early awareness component. The FNDSP aims to maintain social justice and reduce the gap between rich and poor students as well as between the educational resources of rural areas and urban areas. Therefore, college students whose

**Table 2. Four Components of FNDSP**

- 
1. Emergency aid: Support for students affected by major catastrophes, such as hurricane, tsunami, or earthquake.
  2. Financial aid of about 5,000 in New Taiwan dollars (NT\$) per student for student whose family's gross annual income is below NT\$ 70,000, in return for which recipients learn new skills and perform community service to develop independent capacities and become self-supporting, contributing members of society.
  3. Free school lodging for students from low-income families.
  4. Need-based aid: Five levels of subsidies, depending on individuals' financial circumstances and where they study (i.e., public/private institutions).
- 

*Source:* Official Reports of FNDSP, Department of Higher Education, MOE, 2012.

family income ranks in the lower 40% of the population are eligible for a government or institutional subsidy, and the amount of financial aid is based on the individual circumstances. As with the TFCS program, student participants and the government commit to take certain actions, as shown in Table 3.

It is worth noting that the Taiwanese government is more directive toward its financial aid programs and how they are administered at the institutional level than state or federal governments in the United States are. Taiwanese higher education institutions are required to take part in cost sharing by allocating 3% of all tuition and fees to student financial aid. Public institutions are required to distribute at least 1.5%, and private institutions at least 2% of their total revenue for student financial aid. As tuition and fees rise, student financial aid should increase to up to 5%, of the total tuition and fees as well. In 2007-08, the FNDSP distributed NT\$ 587 million to both public and private universities. A total of 675,490 college students received aid through this program, the majority of whom also applied for loans.<sup>3</sup> Although the government and institutions increased the amount of aid for students who were in need during these years, the amount of financial aid students received did not keep pace with inflation and rising tuition costs, resulting in many students taking on loans or more part-time work to pay for college (Department of Statistics, 2012), a situation that still remains unchanged.

### *Differential Emphasis on Need-based Aid in the Two Settings*

Essentially, the TFCS is an early-intervention program intended to equalize opportunities by improving college participation for low-income students in Indiana. TFCS emphasizes secondary level preparation for college while Taiwan's FNDSP focuses on rewards after students successfully begin their studies. The effects of TFCS are overall positively significant in terms of college participation, and scholars who receive TFCS are more likely to persist in college (St. John et al., 2001, 2003, 2004). Nonetheless, improved

**Table 3. Requirements of FNDSP Participants and Commitments of the Taiwan Government**

---

College students who are in the FNDSP must meet the following requirements:

- Maintain at least 2.0 GPA and demonstrate good citizenship by staying out of trouble after college entry.
- Have annual income per family below NT\$ 20,000.
- Own property (per family) of total value below NT\$ 6,500.
- Apply for financial aid in their second semester of postsecondary education.

If students meet these criteria, the government makes a commitment to:

- Provide substantial support for tuition and fees at any public institution each semester, or provide the equivalent amount toward tuition at any private institution.
  - Disseminate relevant financial aid information to all students and appoint financial aid specialists in higher education institutions.
  - Keep college affordable and aim to encourage students to meet the minimum of academic requirements and persist until degree completion.
- 

student persistence in higher education cannot be attributed to the TFCS alone due to the factor of self-selection. Those electing to participate in the TFCS could be assumed to be more motivated than other populations, resulting in the greater likelihood of their persisting regardless of the financial aid they received, potentially leading to a spurious association between the TFCS program and persistence outcomes (Toutkoushian et al., 2013). Furthermore, as St. John et al., (2003) suggested that financial aid is positively significant with the likelihood of remaining enrolled in college, examining the TFCS alone without holding other forms of aid constant could result in inflated effects on college retention (Toutkoushian et al., 2013). Thus, lack of methodological consideration (e.g., controlling for family income) may lend false plausibility to effects in predicting the likelihood of students dropping out from the college. On the other hand, FNDSP aims to keep college affordable and enhance student persistence, particularly for students from low-socioeconomic backgrounds and disadvantaged minorities. Previous research (Lin, 2008; Lin, 2013) indicated that the role of financial aid is necessary for students' continuous enrollment and can help to equalize educational opportunities for low-income students and disadvantaged minorities to persist in college. The various forms of government need-based aid are at the center of Taiwanese financial aid policy, and the variability of student aid has moderating effects on persistence decisions, making financial considerations a major issue (Lin, 2013). As with research on TFCS in Indiana, past studies in relation to FNDSP did not take the effects of self-selection into account, which may have also resulted in plausible findings that were not in fact complete. Furthermore, due to the paucity of research in the area of

financial aid, the complex reasons for leaving school are not well understood. In brief, while the picture is mixed and the emphasis is quite different between the TFCS and the FNDSP, the limitations discussed above may have affected research on both programs.

## **Comparison of Findings**

Without question, finances play a central role in the educational choices available to needy students (Cabrera, Nora, & Castañeda, 1992, 1993). College affordability and educational disparities are among the critical issues in higher education across and within nations, and many higher education policy makers are dedicated to finding ways to improve educational opportunities and equalize postsecondary access for low-income students or disadvantaged minorities. The purposes of both programs under examination here are alike in some ways. Table 4 compares the need-based aid policies of Indiana and Taiwan.

The goals of both programs are to provide equal opportunity and raise the educational aspirations of low-income students, which echo Rawls' first principle of equal opportunity for all. Because, given persistent disproportionalities in terms of educational resources and socioeconomic status, the right of access to higher education has not been wholly met for people who are disadvantaged social positions, financial aid practices in both settings represent attempts to address Rawls' second principle by encouraging needy students and others from the least advantaged groups to prepare for, gain admission to, and graduate from higher education institutions. Thus, a need-based financial aid system supports Rawls' second principle by providing more accessible and equitable opportunities for all to attain a postsecondary education.

In both settings, governments and institutions offer a variety of financial aid packages to students from low-socioeconomic backgrounds and support the principle of vertical equity by distributing aid based on individuals' family income. In general, both set low income as a definite criterion for qualification, and offer full or partial financial support for students who complete specific requirements. In addition, the amount of aid varies by type of postsecondary institutions. The amount that the TFCS offers can vary widely because some students will also receive grants and/or loans from other sources. By contrast, students in the FNDSP may be forced to take out loans for the first semester, suggesting that student aid is insufficient, particularly for low-income students and minorities in private postsecondary institutions (MOE, 2012). A distinguishing difference between Indiana and Taiwan is that the former considers need-based scholarships as incentives for making college accessible, while the latter regards them as the way to promote student persistence.

Other differences between the programs and their supporting policies include connections between high schools and postsecondary institutions and forms of cost sharing. The TFCS can be characterized as an early-intervention program to encourage college participation for low-income students. As a consequence, postsecondary institutions have strong connections with high schools and offer a variety of services and workshops, such as academic mentoring, tutoring programs, career workshops, and campus visits to broaden students' understanding of the value of

**Table 4. Comparison of Need-based Aid in Indiana and Taiwan**

	<b>Indiana (Twenty-First Century Scholars Program)</b>	<b>Taiwan (Financial Need for Disadvantaged Students Program)</b>
<b>Similarities</b>	1. Goals	<p>1. Both focus on equal education opportunities for low-income students, which is consistent with Rawls' first principle; and the emphasis on financial access, which resonates with Rawls' second principle, introduces the concept of greatest benefits to the least-advantaged so as to establish the shared responsibility to equalize educational opportunity</p> <p>2. Both emphasize the notion of vertical equity</p>
	2. Forms of cost sharing	<p>1. Both employ the notion of cost sharing, which has led to shifting the burden of higher education costs from government and taxpayers to students and their families</p> <p>2. The cost-sharing approach has become the tradition in Indiana, while it is in the early stage in Taiwan</p> <p>3. The emphasis has shifted from grant aid to loans, and the amount of loan per student has increased over time</p>
<b>Differences</b>	1. Characteristics	<p>An early intervention program that emphasizes student access to postsecondary education</p> <p>A postsecondary education enrollment program that emphasizes student persistence until degree completion</p>
	2. Intended outcomes	<p>1. Robust levels of aid when combined with federal aid</p> <p>2. Encouraging students to apply for other grants</p> <p>3. Improving high school graduation and encouraging college participation in higher education</p> <p>1. Fair levels of aid; students often must take out loans for the first semester of college attendance</p> <p>2. Encouraging college access for low-income, high-achieving students</p> <p>3. Considering grant aid as the incentive for academic performance and enhancing student persistence.</p>
	Collaboration between secondary and postsecondary education	<p>1. Strong connections: central focus on secondary students</p> <p>2. A holistic network of support services at both secondary and postsecondary institutions, such as mentoring, campus visits, and tutoring</p> <p>1. Weak connections: minimal communication between secondary and postsecondary institutions</p> <p>2. Institutional of outreach initiatives for high school graduates</p>



higher education. By contrast, the FNDSP encourages academic performance and student persistence in the first semester of college, so students do not receive need-based aid until they have completed the first semester and have met the minimum requirement of academic performance. The recipients of FNDSP are also mandated to participate in community service to build character and develop partnerships with campus surroundings. However, there appears to be some disconnection between secondary and postsecondary system; high school students may not even know about the FNDSP and therefore fail to apply to college, thinking they cannot afford it (Lin, 2008). The lack of emphasis on providing information about financial aid also likely increases the amount of debt assumed by low-income students.

The practice of cost sharing has been increasing in both Taiwan and Indiana. It is particularly salient in the U.S. context because differential tuition policies across institutions have long been a tradition (Altbach, Gumport, and Berdahl, 2011). As the cost of postsecondary education has risen over time, the trend for public institutions to rely on tuition revenues has moved them toward increasing privatization (Hossler, 2006; Johnstone, 2004). That is, as the government's and hence the taxpayers' share of costs has diminished, the share borne by parents and students has increased. The National Center for Educational Statistics (2012) reported that over the last decade, the rising price for attending college has outpaced inflation rates. Approximately two-thirds of students borrow to pay for tuition costs. The expansion of college access will likely result in continuing reliance on loans (Hillman, 2014). In Taiwan, since the government has attempted to regulate tuition rates to be consistent with the Gross National Product (GNP), there is less fluctuation than in Indiana. However, tuition costs have risen steadily by nearly 45% between 1996 to 2008. The reauthorization of the University Act (2005) prompted the restructuring of postsecondary institutions into independent legal entities, thereby reducing government control (Mok, 2006; MOE, 2008). Colleges and universities need to generate their own institutional revenues, for which student tuition dollars have become an alternative source. In 2010-11, student borrowing increased by nearly 25%, and nearly 8.5% received grant aid from the government in the same year (MOE, 2013). Nearly 80% of low-income students were concentrated in private postsecondary institutions with higher costs and less financial support, raising the likelihood of their taking on debt. In summary, the notion of cost sharing is evidenced in both settings, and the emphasis in financial aid has shifted from grants to loans (Johnstone, 2006a; Tai, 2008).

## **Conclusions**

This study highlights the importance of government and postsecondary institutions in ameliorating social inequalities in both Indiana and Taiwan. As the analysis above indicates, need-based aid programs in both settings were founded on the principle of vertical equity, which aims to equalize higher educational opportunity for low-income students and minorities (Doyle, 2008; St. John et al., 2001, 2003). However, with the increased popularity in both settings of the concept of cost sharing and its consequent heavy burden on students from low socioeconomic backgrounds, there is now a need to reexamine the financial aid systems that are intended

to hold open the door of opportunity for these students. As this study shows, both Taiwan and Indiana recognize the value of higher education in increasing human capital in the workforce and boosting economic development both locally and around the globe. To that end, both are investing in need-based aid programs that can increase the availability of workers with a postsecondary education. Rawls' first principle, relating to equal rights to access, suggests that providing equal access encourages college attendance for all permeates financial aid policies in both settings. Nonetheless, socioeconomic disparities continue to widen the gaps between different socioeconomic groups (Cheng and Jacob, 2012), calling for financial accommodations for needy students. This resonates with Rawls' second principle, which introduced the concept of greatest benefits to the least advantaged to establish the shared responsibility to equalize educational opportunity from one generation to the next. It also echoes the rationale of vertical equity. Taiwan grants need-based aid after students are academically successful in the first semester, which could be viewed as providing incentives for students to focus on academic performance. However, the growing trend of replacing grants with student loans appears to erode educational opportunity for college-qualified students from low-income backgrounds (MOE, 2012). On the other hand, these programs may be sustaining tremendous inequities among different socioeconomic backgrounds, a possibility that warrants more research (AASCU, 2000).

Indiana provides an example of how to build reciprocal partnerships and educational networks between secondary schools and postsecondary institutions. Indiana's TFCS is an early-invention initiative to encourage college attendance, particularly for high-achieving students from low-income backgrounds. Accordingly, high schools are well connected with postsecondary institutions to provide financial aid information and encourage high school graduates to attend college (Advisory Committee on Student Financial Assistance, 2002). However, the study conducted by Toutkoushian et al. (2013) revealed that the positive effects of the TFCS on student persistence were substantially smaller than those reported by previous researchers. In addition, TFCS participants were more likely than other students to enroll in two-year community colleges or lower-cost institutions (Indiana Commission for Higher Education, 2012; St. John et al., 2001, 2004).

By contrast, the FNDSP in Taiwan is administered by the government in collaboration with postsecondary institutions in response to the expansion of higher education and increasing student enrollments (Mok, 2006). Low-income students in the FNDSP are eligible for need-based grants only after they have successfully completed their first semester, so most also take on part-time employment and/or loans to pay for college expenses for the first and often for successive semesters (Chen, 2008). The intended goal is to support student persistence by making college more affordable for those who demonstrate a commitment to earning a degree by successfully completing their first semester. Nonetheless, there has been little research in Taiwan regarding the effects of FNDSP on student persistence, and thus the outcome data for FNDSP merits further investigation. For instance, findings from the prior research (Hung & Cheng, 2009; Yang & Chen, 2009) revealed that unequal resources correlate with the selectivity

of postsecondary institutions in terms of financial support and academic environment, and the overall importance of financial aid on college enrollment has clearly established a differential on low-income students and disadvantaged minorities. According to the latest MOE reports (2012), from 2004 to 2011, government expenditures in financial aid programs have increased by approximately 42% while the number of FNDSP recipients has increased by only 25%. The effects of the FNDSP are associated with students' intention to remain enrolled (Yang, 2007), while the inadequacy of aid and the limited provision of student aid information in advance that may discourage those who come from low-socioeconomic backgrounds. Thus, further investigation is needed on FNDSP and how it affects student success.

Taken together, this study's findings relating to Taiwan's FNDSP and Indiana's TSCF extend our understanding of financial aid systems implemented in various ways across and within nations, and encourage further deliberation on the potential contribution of financial aid to the college success for needy students. Due to self-selection effects, findings in the effects of financial aid in both programs on student persistence should be tempered by the need of future research. Particularly, the paucity of research in the area of financial aid in Taiwan suggests the need to develop a longitudinal database on college participation and student enrollment behaviors to sustain and enhance student success.

In keeping with Rawls' principle of fairness, need-based financial aid programs grounded on vertical equity based on individuals' circumstances have played an important role for students aspiring to attend a college. Both programs demonstrate an effort to use taxpayer funds as efficiently as possible in achieving the goals of the financial aid system. The FNDSP in Taiwan prioritizes good academic performance by requiring students to complete their first semester successfully before receiving financial benefits, while Indiana's TFCS is designed to motivate students to prepare for postsecondary education. For both programs, need-based aid is the central resource to help low-income, high-achieving students pursue their higher educational goals, suggesting that the government and postsecondary institutions should provide packages of various forms of aid in a timely way to support student success. Most importantly, postsecondary institutions should position themselves to make informed decisions about specific practices and programs that help prepare students, encourage enrollment, and support persistence through program completion.

Due to self-selection and methodological considerations, the effects of need-based aid policies in the cases of Indiana's TFCS and Taiwan's FNDSP are mixed. However, this does not undermine the value of need-based scholarships, which are a central source of aid for low-income and disadvantaged minority students. In light of concerns about the efficacy of need-based aid programs, governments and postsecondary institutions should examine the effects of financial aid systems on college attendance and completion from a longitudinal perspective. This will allow the impact of policy changes regarding financial access to be better understood, and will help to prevent further erosion of educational opportunities for students who aspire to a college education.

### Nexus: Connecting Research in Practice

While each educational system reflects its corresponding sociocultural issues, Taiwan and Indiana may be able to learn from each other how to improve their already substantial efforts to equalize college opportunities for students from different social classes. Based on the findings, we recommend the following:

- Funding from the government and the state has not kept pace with increases in college costs in Taiwan and Indiana, so cost sharing has become the strategy for institutions to increase revenues, thus shifting the financial burden from the government or taxpayers to students and their parents. This may discourage students from low-socioeconomic backgrounds from pursuing college degrees. Postsecondary institutions should make college affordability a priority and ensure educational opportunity for low-income, high-achieving students by implementing such policies as increasing the amount of institutional aid to match government funds for need-based scholarships.
- As governments in both settings have moved from providing some families with all higher educational costs to sharing costs with students and their families, it is critical to provide students and families with information on college costs and how the financial aid system works. For instance, in Indiana, when the TFCS is combined with Federal Pell Grants, government financial aid can cover all of the direct costs of postsecondary education, although the sum may be insufficient to also pay for room and board. In Taiwan, financial aid does not cover the costs of room and board, and often it does not cover the total direct costs of attendance, which may result in a greater likelihood of students dropping out. Policies and networks should be created between secondary and postsecondary systems so that students and their parents are clearly informed about college and financial aid opportunities.
- The effects of selection bias may produce a spurious association between a financial aid program and persistence outcomes. Nonetheless, this does not undermine the value of need-based scholarships, which have traditionally been a central source of aid for low-income and disadvantaged minority students. In light of concerns about the efficacy of need-based aid programs, governments and postsecondary institutions should examine the effects of financial systems on postsecondary enrollment and completion from a longitudinal perspective. For example, policy makers and institutional researchers may consider the use of randomized experiments or quasi-experimental methodologies to reduce or eliminate the issue of endogeneity bias (Toutkoushian et al., 2013). This will allow the impact of policy changes regarding financial access to be better understood, with the goals of allowing for the exploration of new programs and preventing further erosions of educational opportunities for students who aspire to a college education.

### *Endnotes*

<sup>1</sup> Globalization refers to the interactive process by which worldwide social relations are strongly correlated with local conditions, and local events are also shaped by global influences (Arnove, Torres, & Franz, 2013).

<sup>2</sup> Aboriginal refers to peoples who have inhabited land from earlier times or before the arrival of colonial powers. Since these individuals are minorities, the government enacted the relevant passages to protect their educational rights.

<sup>3</sup> According to the official report in the Ministry of Education (2009), a total of 569,770 applicants applied for loans to pay for higher education costs. The rate of student borrowing has been accelerating.

## References

- Advisory Committee on Student Financial Assistance (2002). *Empty promises: The myth of college access in America*. Washington, D.C.
- Altbach, P. G., Gumport, P. J., & Berdahl, R. O. (2011). *American higher education in the twenty-first century: Social, political, and economic challenges* (3<sup>rd</sup> Ed.). The John Hopkins University Press.
- Arnove, R. F., & Torres, C. A. (2007). *Comparative education: The dialectic of the global and the local* (3<sup>rd</sup> Ed.), Rowman & Littlefield Publishers, Inc.
- American Association of State Colleges & Universities (2000). *State Student Financial Aid: Tough Choices and Trade-Offs for a New Generation. Perspectives*, 2(1).
- Bereday, G. Z. F. (1964). *Comparative method in education*: Holt, Rinehart & Winston, Inc.
- Cabrera, A. F., Nora, A., & Castañeda, M. B. (1992). The role of finances in the persistence process: A structural model. *Research in Higher Education*, 33(5), 571-593.
- Cabrera, A. F., Nora, A., & Castañeda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *The Journal of Higher Education*, 64(2), 123-139.
- Callender, C. (2006). Access to higher education in Britain: The impact of tuition fees and financial assistance. *Higher Education Dynamics*, 14, 105-132.
- Chan, S-J. (2011). Cost-sharing and financial aid to students: On the emergence of new loan mechanism. *Higher Education*, 6(1), 45-78.
- Chen, Z-L. (2008). The study of college students doing part-time work in higher education. *Taiwan Labor Quarterly*, 14, 68-82.
- Cheng, S. Y., & Jacob, W. J. (2012). Expansion and stratification of higher education in Taiwan, *Chinese Education and Society*, 45(5), 112-133.
- Chou, C. P. (2010). The study of educational expenses on college students in Taiwan. *Comparative Education*, 68, 1-25.
- College Board (2012). *Trends in college pricing 2012*. New York: Authors.
- Department of Statistics (2012). The international comparative index of educational statistics. Ministry of Education, Taiwan.
- Doyle, W. R. (2008). Access, choice and excellence: The competing goals of state student financial aid programs. In S. Baum, M. McPherson, & P. Steele (Eds.) *The effectiveness of student aid policies: What the research tells us*, (pp. 159-185): College Board.

- Forsey, M., Davies, S., & Walford, G. (2008). The globalisation of school choice? An introduction to key issues and concerns. In M. Forsey, S. Davies & G. Walford (Eds.), *The globalisation of school choice?* (pp. 1-25). United Kingdom.
- Hansen, J. S. (2008). Rethinking student aid: Learning from international experience. In S. Baum, M. McPherson, & P. Steele (Eds.) *The effectiveness of student aid policies: What the research tells us*, (pp. 189-212). College Board.
- Hatfield, K. (2003). Funding higher education for adult students. *New Directions for Student Services*, 102, 27-34.
- Hillman, N. (2014). College on credit: a multi-level analysis of student loan default rates. *Review of Higher Education*. 37(2), 169-195.
- Hossler, D. (2006). Students and families as revenue: The impact on institutional behaviors. In D. M. Priest & E. P. St. John (Eds.), *Privatization and public universities* (pp. 109-128). Indiana University Press.
- Hung, C. C., & Cheng, S. Y. (2009). Access and equity: Who are the students at Taiwan's top universities? *CERC studies in comparative education*, III, 290-306, Retrieved from DOI: 10.1007/978-90-481-2652-1\_12effectiveness of student aid policies: What the research tells us (pp. Hunt, I. (2007). *Aristotle's theory of justice as the basis of Rawls' justice as fairness*. Paper presented at the Greek Research in Australia: Proceedings of the Sixth Biennial International Conference of Greek Studies.
- Indiana Commission for Higher Education (2012). *Indiana's Twenty-first Century Scholar Program: Years of impact*. U.S.: Indiana.
- Jencks, C., & Reisman, D. (1977). *The academic revolution*. Chicago: University of Chicago Press.
- Johnson, N., & Yanagiura, T. (2012). *Evaluation of Indiana's financial aid programs and policies reports*. Indiana Commission for Higher Education.
- Johnstone, D. B. (2009). World trends in financing higher education. Retrieved from August, 28<sup>th</sup>, 2014 from [http://gse.buffalo.edu/org/inthigheredfinance/project\\_publications.html](http://gse.buffalo.edu/org/inthigheredfinance/project_publications.html)
- Johnstone, D. B. (2004). Cost-sharing and equity in higher education: Implications of income-contingent loans. In P. Teixeira, B. Jongbloed, D. Dill and A. Amaral (Eds.), *Markets in higher education: Rhetoric or reality* (37-59). New York: Springer Publishers.
- Johnstone, D. B. (2006a). Cost-sharing and accessibility in higher education: A fairer deal? *Higher Education Dynamics*, 14, 105-132.
- Johnstone, D. B. (2006b). Cost-sharing in higher education: Tuition, financial assistance and accessibility in comparative perspective. *Financing higher education: Cost-sharing in an international perspective*. Boston: Boston College & Sense Publishers.

Johnstone, D. B., & Marcucci, P. N. (2007). *Worldwide trends in higher education finance: Cost-sharing, student loans, and the support of academic research*. Retrieved Dec 9, 2012, from <http://www.unesco.org/new/en/education/themes/strengthening-education-systems/higher-education>

Johnstone, D. B., & Marcucci, P. N. (2010). *Financing higher education worldwide: Who pays? Who should pay?* Baltimore, MD: Johns Hopkins.

Lin, C.-H. (2013). *The effects of financial aid policies in Taiwanese higher education*. Unpublished doctoral dissertation, Indiana University, Indiana.

Lin, H.-F. (2008). *Research on related factors affecting the dropouts or persistence of technical college students: An example of students from technical colleges in Taipei area*. National Taiwan Normal University, Taipei.

Long, B. T., & Riley, E. (2007). Financial aid: A broken bridge to college access? *Harvard Educational Review*, 77(1), 25.

Lumina Foundation (2009). Lumina Foundation's strategic plan: Goal 2025. IN: Indianapolis.

Ministry of Education (2008). *The report in 2008 Educational statistical indicators*. Taipei, Taiwan.

Ministry of Education (2009). *Introduction to higher education in Taiwan*. Taipei, Taiwan.

Ministry of Education (2012). *The report in 2012 Educational statistical indicators*. Taipei, Taiwan.

Ministry of Education (2013). *Help dreams*. Retrieved July 15, 2013, From <https://helpdreams.moe.edu.tw/NewsContent.aspx?id=171>

Mok, K. H. (2006). *Education reform and education policy in East Asia*. New York, NY: Routledge.

National Center for Public Policy & Higher Education (2008). *Measuring up 2008: The national report card on higher education*. Retrieved February 20, 2009 from <http://measuringup2008.highereducation.org/>

Phillips, D., & Ochs, K. (2004). Researching policy borrowing: Some methodological challenges in comparative education. *British Educational Research Journal*, 30(6), 773-784.

Rawls, J. (1971). *A theory of justice*. Cambridge: Harvard University Press.

Rawls, J. (1999). *A theory of justice (Rev. ed.)*. Cambridge: Harvard University Press.

Redd, K. E. (2004). Lots of money, limited options: College choice and student financial aid, *Journal of Student Financial Aid*, 34(3), 29-39.



- Rhoades, G., & Slaughter, S. (2004). Academic capitalism in the new economy: Challenges and choices. *American Academic*, 1(1), 37-60.
- St. John, E. P. (2003). *Refinancing the college dream: Access, equal opportunity, and justice for taxpayers*: The Johns Hopkins University Press.
- St. John, E. P., & Chung, C. G. (2004). Merit and equity: Rethinking award criteria in the Michigan Merit Scholarship Program. In E. P. St. John and M. D. Parsons (Eds.), *Public funding of higher education: Changing Contexts and New Rationales* (pp. 124-140): The John Hopkins University Press.
- St. John, E. P., Gross, J., Musoba, G. D., & Chung, A. S. (2005). *A step toward college success: Assessing attainment among Indiana's Twenty-First Century Scholars*: Lumina Foundation for Education.
- St. John, E. P., Hu, S., Simmons, A. B., & Musoba, G. D. (2001). Aptitude vs. merit: What matters in persistence. *The Review of Higher Education*, 24(2), 131-152.
- St. John, E. P., Musoba, G. D., & Simmons, A. B. (2003). Keeping the Promise: The impact of Indiana's Twenty- First Century Scholars Program. *The Review of Higher Education*, 27 (1), pp. 103–123.
- St. John, E. P., Musoba, G. D., Simmons, A., Choong-Geun, C., Schmit, J., & Peng, C.-Y. J. (2004). Meeting the access challenge: An examination of Indiana's Twenty-First Century Scholars Program. *Research in Higher Education*, 45(8), pp. 829-971.
- St. John, E. P., Paulsen, J. M., & Carter, D. F. (2005). Diversity, college costs and postsecondary opportunity: An examination of the financial nexus between college choice and persistence for African Americans and Whites. *The Journal of Higher Education*, 76(5), 545-569.
- State Student Assistance Commission of Indiana (2012a). *Twenty- First Century Scholars Program*. Retrieved October 20, 2012, from <http://www.in.gov/ssaci/2345.htm>
- State Student Assistance Commission of Indiana (2012b). *Twenty- First Century Scholars Program Statistical Report for Academic Year 2011-2012*. Retrieved September 23, 2014, [http://www.in.gov/sfa/files/21st\\_Statutory\\_Report.pdf](http://www.in.gov/sfa/files/21st_Statutory_Report.pdf)
- Sanyal, B., & Johnstone, D. B. (2011). International Trends in the Public and Private Financing of Higher Education. *Prospects*, 41(1), 157-175.
- Tai, H. H. (2008). Government failure & market failure: An anatomy of Taiwan's University tuition policy and its problems. *Higher Education* 3(1), 81-128.
- Toutkoushian, R. K., Hossler, D., DesJardins, S. L., McCall, B. P., & Canche, M. G. (2013). Effect of TFCS on student aspirations and outcomes (pp. 1–52). Presented at the Association for Education Finance and Policy, New Orleans, LA.

Usher, A., & Medow, J. (2010). Global higher education rankings 2010. *Affordability and accessibility in comparative perspective*. Retrieved September 9, 2013, from [http://higherstrategy.com/wp-content/uploads/2011/09/GHER2010\\_FINAL.pdf](http://higherstrategy.com/wp-content/uploads/2011/09/GHER2010_FINAL.pdf)

Yang, S. C. (2007). The study of university attending, assistance and low-income family students grants. Unpublished masters thesis, National Chiayi University, Chiayi, Taiwan.

Yang, C. C., & Chen, S. Y. (2009). Tuition and finances in higher education in Taiwan. Retrieved June 20, 2012, from the Center of Integrated Higher Education Database System in Taiwan.

Zumeta, W. (2004). State higher education financing: Demand and imperatives meet structural, cyclical, and political constraints. In E. P. St. John and M. D. Parsons (Eds.), *Public funding of higher education: Changing contexts and new rationales* (pp. 79-107): The John Hopkins University Press.