

An Economic Analysis of Debt Swaps and Case Study of the Harvard Debt for Education Swap

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Summary.— Evaluation of Harvard University's debt for education swap with Ecuador yields a clear bottom line: Harvard unambiguously gains from the deal, since tuition receipts more than double initial outlays, and the university acquires assets to fund research in Ecuador. Ecuador's economic benefits, however, are less clear, since the dollar outflow from Ecuador may exceed the amount of new scholarship aid plus the true buyback value. Participants in future debt for education deals must consider both the uncertainty of economic gains and possible macroeconomic consequences for the debtor country.

1. INTRODUCTION

The most common market-based tools used since the mid-1980s to reduce debtor country obligations include debt buybacks and debt-equity swaps. This paper uses a case study to illustrate the high implicit costs of a debt swap to the debtor country under plausible conditions. In the first "debt for education" swap of its kind, Harvard University and Ecuador agreed in 1990 to combine a debt buyback with new scholarship funds for Ecuadorian and Harvard students.¹ The deal generated abundant publicity with a "no losers" type message. For example, Harvard's vice president for finance stated "It is a win for everyone."² Such a comment exemplifies the common perception that debt for education and another debt swaps have few drawbacks.

This study first summarizes potential drawbacks at the macro level; in particular, debt swaps can raise the debt's market price, create foreign exchange losses, and lead to fiscal imbalances.³ A debtor country may benefit more from direct investment of foreign exchange within the country than from a debt swap. By itself Harvard's debt for education swap with Ecuador was too small to have macroeconomic consequences, but other universities plan to make similar deals (including Harvard itself, which concluded a second debt for education swap in 1991 with Mexico).⁴ If the scale of debt for education swaps is expanded, they could become a costly and suboptimal means of reducing debt and investing in education.

This study also examines Harvard's economic

benefits from the swap and the implicit price which Ecuador paid for the Harvard scholarships. The calculations give rise to a clear bottom line that Harvard unambiguously gains from the deal, since tuition receipts more than double initial outlays, and the university acquires assets to fund research in Ecuador. Ecuador's economic benefits are less clear, however, since the dollar outflow from Ecuador may exceed the amount of new scholarship aid plus the true buyback value. Expectations of high payoffs and political benefits from positive publicity may explain why Ecuador made the agreement with Harvard.

The paper is organized as follows. Section 2 presents an overview of the macroeconomic issues surrounding debt swaps. Section 3 evaluates Harvard University's debt for education swap with Ecuador. Section 4 examines related issues and concludes.

2. MACROECONOMIC ISSUES

In a typical debt swap, a foreign investor or university buys external debt from a commercial bank at the secondary market discounted price. The investor trades the debt paper for domestic

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currency or bonds, and invests the proceeds in public or private equity within the country. With debt for education swaps, the currency is used to fund scholarships and research grants.

The usefulness of debt swaps is subject to skepticism on several grounds. First, a debt buyback may cause the secondary market price to increase, which raises the buyback cost.⁵ In addition, debt swaps will benefit both creditor and debtor only if a reduction in nominal debt raises the expected repayment. From the debtor country's view, a debt swap lowers the contracted repayment in all future contingency states, but it lowers the actual repayment only in good states when the country has enough resources to finance all its external debt. Hence the buyback will not help the debtor country in the future if it cannot make the full repayment, and the reserves may be better spent today on productive investment projects.

Second, debt swaps may have no effect on new domestic investment in the debtor country. One common explanation for the large investment decline during the 1980s in many highly indebted countries is that large external debt obligations act as a tax on investment and cause it to decline.⁶ Empirical support for and against a debt overhang effect, however, remains inconclusive, which adds ambiguity to the argument that debt reduction increases the debtor country's future investment.⁷

Third, debt swaps may create foreign exchange losses. The loan paper which the country acquires after a swap may substitute for foreign exchange which the investor would have invested directly without the swap. By transferring foreign exchange from investors and universities to commercial banks, debt swaps divert resources away from alternative productive investments. In addition, risk-averse investors could convert local currency from a debt swap into foreign exchange for investment abroad if the country has uncertain future exchange rates, tax policy, and financial regulations.⁸

Finally, financing mechanisms add to fiscal imbalances in the debtor country. A debtor government must finance the swap's local currency component. Tax increases and expenditure cuts, however, are politically unpalatable and have real opportunity costs. Increased external borrowing is difficult and expensive, while extra government demand for domestic credit could raise total debt service costs for the government and crowd out investment.⁹ Furthermore, reserve losses can lead to Central Bank imbalances. Printing new money as a source of "seignorage" revenue may be the easiest solution, but this creates inflationary pressures.¹⁰

3. EVALUATION OF HARVARD'S DEBT FOR EDUCATION SWAP

Harvard University, in the first debt-for-education swap of its kind, agreed in July 1990 to buy \$5 million of Ecuadorian debt (only 0.05% of Ecuador's total debt) for \$775,000 from a US commercial bank at the secondary market price of 15.5 cents.¹¹ Harvard donated the debt to Fundacion Capacitar, a private nonprofit education institute in Ecuador, which in turn swapped the debt paper at the Central Bank for local currency bonds (see Appendix A for details of the swap).¹² Fundacion Capacitar held 15% of the bonds for one year, and at maturity Fundacion Capacitar invested the bond proceeds in an Ecuadorian money market fund.¹³ Annual returns finance travelling expenses and stipends for 50 Harvard students (undergraduate and graduate) and faculty for 10 years to perform research in Ecuador.

Fundacion Capacitar sold the remaining 85% of the bonds to a small group of Ecuadorian commercial banks at a small discount, and then exchanged the local currency for dollars.¹⁴ Before the final agreement, Harvard had acquired an official guarantee to ensure the exchange of sucres for dollars.¹⁵ Finally, Fundacion Capacitar invested the money in a US money market fund chosen from a list approved by Harvard. Annual returns finance 20 Ecuadorian students (eight undergraduate and 12 graduate) over a 10-year period.¹⁶ The first Ecuadorian students in the program arrived at Harvard in the fall of 1991. After 10 years Harvard administrators and Ecuadorian officials will review the project and decide whether to continue the agreement.¹⁷

Assuming a benchmark debt value at the \$0.155 secondary market price, the Ecuadorian economy paid \$1,801,666 for \$775,000 worth of debt with face value of \$5 million (see Appendix B). The dollar price to Ecuador is \$0.36 ($1,801,666/5,000,000$), which is almost 2.5 times the market price of \$0.155. Ecuador's price also exceeds the marginal value of debt reduction, which is close to zero.

If one regards the debt donation as savings of \$775,000 for Ecuador, then the net outflow of foreign exchange from Ecuador is $-\$1,026,666$ ($775,000 - 1,801,666$). If one further assumes that at \$20,000 per year, the economic value of eight undergraduate scholarships amount to \$640,000 ($8 \times 80,000$), and 12 graduate scholarships amount to \$480,000 ($12 \times 40,000$), then the total value of Harvard scholarships which Ecuador acquires through the swap is \$1,120,000. The value of scholarship aid exceeds \$1,026,666, the implicit price paid by Ecuador, which means that

Ecuador gains financially from participating in the swap. This is the best possible scenario. The remaining discussion considers the best case scenario with variations on the share of the scholarship fund which is actually new aid, and variations on the true benchmark value of the \$5,000,000 buyback.

In the past, Ecuadorian students attending Harvard covered tuition and fee payments through a combination of Harvard and international scholarships, Ecuadorian government support, and family contributions. Hence the true value of new scholarship aid from the debt swap is less than the full tuition cost, since Harvard and international foundations would have financed a share anyway, without the swap. The net gain or loss to Ecuador will vary with the share of scholarship aid that is actually new aid. The second variation on the best case scenario involves the buyback's true value. If the buyback were valued at zero, which is the marginal debt reduction value, the net foreign exchange outflow from Ecuador would be \$1,801,666, which means Ecuador overpaid for the scholarships.

What is the rule of thumb to remember? Ecuador gains from the swap as long as the value of new scholarship aid plus the buyback's true value exceed the dollar outflow from Ecuador. Harvard University gains unambiguously from the swap, receiving tuition payments which more than double initial outlays, and assets to finance research in Ecuador. Table 1 demonstrates net gains and losses for Ecuador under alternative shares of new scholarship aid, and alternative benchmarks of the buyback's true value. The table uses the formula:

$$\text{Net gain (loss)} = s \times (1,120,000) + BV - 1,801,666,$$

Table 1. *Ecuador's net loss/gain (in US\$)**

Share of Scholarship Fund which is New Aid	Benchmark value of debt buyback		
	0	681,666	775,000
50%	-1,241,666	-560,000	-466,666
75%	-961,666	-280,000	-186,666
92%	-774,962	-93,296	0
100%	-681,666	0	+93,334

Source; Calculated from figures in *The Harvard Crimson* (1990), p. 5; and from interviews with Tom Sanders of the Harvard Institute for International Development and Ned Strong of LASPAU.

*Calculations are based on the following formula:
 Net gain (loss) = $s \times (1,120,000) + BV - 1,801,666$

where s denotes the share of scholarship fund which is actually new aid, \$1,120,000 is the scholarship value, BV is the benchmark value of the debt buyback, and \$1,801,666 is the dollar amount which Ecuador's economy paid for the swap. Negative figures in the table are overpayments by Ecuador.

The table shows two plausible breakeven points for Ecuador. If the entire fund created by the debt swap is new aid ($s = 1$), then for any buyback value over \$681,666, Ecuador will gain from the swap. If the true buyback value is the average value ($BV = 775,000$) instead of the marginal value ($BV = 0$), then for any new aid share of the scholarship fund over 92%, Ecuador will gain from the swap. Any other scenario with lower values for debt and new aid shares involve net losses for Ecuador, as demonstrated in the table.

Two important caveats are as follows. First, Ecuador also paid on net 429.8 million sucres to finance stipends for Harvard scholars. For simplicity the above dollar calculations do not include the domestic currency component; if included, the implicit price which Ecuador paid for the scholarships rises. Second, the breakeven points change depending on the assumed scholarship value.¹⁸ Still, Ecuador benefits from the swap only if critical levels of new scholarship aid and true buyback value are reached.

Although Harvard paid \$775,000, it records a net gain with money market receipts of \$1,801,660 (annual payments of \$180,166 for 10 years) and a 429.8 million sucres fund to finance Harvard researchers in Ecuador. Gains for the university increase if it finds private donors to fund the initial outlays; these grants help the university gain qualified foreign students at a lower cost and more funds to do research abroad than before the swap. Incentives to attract donors include positive publicity and tax benefits. Other American universities have asked Harvard for a "manual" on debt for education swaps, and the Ford Foundation awarded Harvard a grant of \$93,000 to write a handbook.¹⁹

To avoid the added complexity and uncertainty surrounding the debt buyback, an alternative plan involves a direct swap with Harvard for education alone and no debt component. Harvard contributes \$775,000 and Ecuador matches this with a dollar contribution it can afford to spend for Harvard scholarships. The plan also includes a sucres fund in Ecuador to finance research by Harvard scholars. The alternative plan may not reduce any of Ecuador's debt, but it does make funds directly available for investment in education. Any debt component of an alternative deal would solely be based on debt forgive-

ness by commercial banks. An alternative debt for education swap could also change the location of the entire investment fund to Ecuador, so the country benefits from education and a direct infusion of foreign exchange.²⁰

4. SUMMARY AND OTHER ISSUES

The debt for education case study demonstrates that Ecuador gains economically only if the true buyback value and the new scholarship aid exceed critical benchmarks. Positive expectations of meeting the economic criteria and political benefits from positive publicity may explain why Ecuador agreed to the swap. Harvard University unambiguously gains from the deal, which adds to the incentive for other universities to pursue debt for education swaps. If, however, the scale of debt for education swaps is expanded, they could have significant macro-economic repercussions and become a costly means of reducing debt and investing in education.

Before making more debt for education agreements, policy makers in developing countries, university administrators, and potential donors must consider other issues regarding investment in education. One issue is "brain drain," which poses a potential problem for any program that provides US scholarships for developing country students, since foreign students may not return to their home countries.²¹

Debt for education swaps may also have large opportunity costs. The swap may divert foreign exchange and local funds away from activities with higher returns (such as primary education) to activities of lower value to the country (such as financing a few students to attend Harvard). Existing evidence on returns to education in developing countries suggests that rates of return are highest at the primary school level and lowest at the university level.²² Ecuador may have yielded more from investment in primary education than from investment in the debt for education swap.

NOTES

1. Reifenberg (1988) first introduced the debt-for-education idea in his John F. Kennedy School Policy Analysis Exercise on debt for education deals by the Latin American Scholarship Program of American Universities (LASPAU).

2. From *The New York Times* (1990), p. 18. See also *The Harvard Crimson* (1990), pp. 1, 5.

3. In addition to references in subsequent notes, see Claessens and Diwan (1989b), Burton (1990), Larrain and Velasco (1990), and van Wijnbergen (1990) for more detailed examinations of debt swaps.

4. See *The Harvard Crimson* (1991), pp. 1, 5, and *The Harvard Independent* (1991), pp. 3-4.

5. See Bulow and Rogoff (1988), Cohen (1989), and Krugman (1989) for further discussion, analytics, and examples.

6. See Sachs (1986), Claessens and Diwan (1989a), and Froot, Scharfstein, and Stein (1989) for discussions of the investment decline and explanations centered around the debt overhang effect.

7. Faini and de Melo (1990) find a significant and high negative coefficient on the debt/export ratio. The term enters, however, as a ratio, making it difficult to separate the effects from debt and exports. Bulow and Rogoff (1990), Eaton (1990), and Warner (1990) are more skeptical of a direct negative relationship between investment and external debt.

8. Such an exchange, if made on the black market, is often referred to as "round tripping."

9. Sachs (1990) compares a conversion of foreign debt into expensive internal debt to junk bond financing by an insolvent government.

10. See Dornbusch and Fischer (1991) for a literature review and extensive bibliography on seignorage and the inflation tax.

11. The Harvard Management Company, an affiliate that arranges the university's investments, purchased one chunk of Ecuadorian tranche six consolidation debt with maturity in July 1990.

12. The domestic bonds had a one-year maturity and 44% rate of return, which amounted to a 4% real return given an average annual inflation rate of 40% in 1990. In 1989 and 1990 Ecuador had large budget surpluses and high international reserve levels relative to the size of the swap. The case study does not argue that the swap heavily burdens Ecuador's fiscal budget; instead, it stresses the swap's opportunity cost and net losses under plausible conditions.

13. The bonds were held in an Ecuadorian trust, and there was a possibility of rolling the bonds over. To the best of the author's knowledge, the government repaid the bonds in full after one year.

14. The bonds sold at an average 15% discount on the market because the government preferred that, in debt

swaps, foreigners accept bonds with longer maturities. The government offered lower returns on bonds with the shortest maturities to make them less attractive, so they sold at a discount. The market discounts may also have reflected uncertainty surrounding inflation or full repayment. It is not clear whether the banks which bought the bonds are the same banks which converted the sucres into dollars.

15. Harvard negotiated the foreign exchange agreement to "eliminate the risk of not being able to produce US dollars under the plan." (From a document entitled "Safeguards for Conversion of Local Currency to U.S. Dollars" obtained from the LASPAU office in Cambridge, MA.) At the time Ecuador generally did not prohibit the conversion of local currency into foreign currency, and dollars were readily obtained at commercial banks (larger transactions could require a two- or three-day wait and a price increase reflecting higher demand for dollars). As an extra guarantee to Harvard, the government established a mechanism of project approval which included reconversion of sucres into dollars.

16. The distribution of undergraduate and graduate students in the program will affect the returns to education in Ecuador. If professional and graduate students contribute more to Ecuador's value added than undergraduates, then a larger share of graduate students in the program is optimal.

17. If the deal is terminated at any time, Harvard will receive 36% of the total fund and Fundacion Capacitar 64%.

18. For example, if one assumes the value of a scholarship is \$25,000 per year, the new aid share breakeven point changes to 73% and the buyback's benchmark value changes to \$401,666.

19. The grant in effect reimburses Harvard for 12% of its initial outlays. See the *Harvard University Gazette* (1991), pp. 1, 8.

20. Institutions such as Harvard may pursue debt swaps to ensure that direct cash inflows will not be lost to corrupt channels in the debtor country. Direct aid flows tied to performance criteria (environmental protection, education improvements, or controls on drug production) could help to stop corruption.

21. See Lien (1987) for a theoretical brain drain model and discussion of precious empirical evidence. The Harvard debt for education swap does impose a restriction on Ecuadorian students who do not return home upon graduation: students funded by the program will take out loans for their Harvard education. Those who return to Ecuador and work for 5-10 years in services such as public health will have their loans forgiven; those students who remain in the United States are required to pay back their loans at US market rates.

22. The small unit cost of primary education compared to additional future income derived from literacy explain the high returns; the unit cost of university education is larger and marginal returns small. See Tilak (1989).

REFERENCES

- Agarwal, V., and D. Winkler, "Foreign demand for United States higher education: A study of developing countries in the Eastern hemisphere," *Economic Development and Cultural Change*, Vol. 33, No. 3 (1985), pp. 623-644.
- Bulow, J., and K. Rogoff, "Cleaning up third world debt without getting taken to the cleaners," *Journal of Economic Perspectives*, Vol. 4, No. 1 (1990), pp. 31-42.
- Bulow, J., and K. Rogoff, "The buyback boondoggle," *Brookings Papers on Economic Activity*, Vol. 2 (1988), pp. 675-704.
- Burton, E., "Debt for development: A new opportunity for nonprofits, commercial banks, and developing states," *Harvard International Law Journal*, Vol. 31, No. 1 (1990), pp. 233-256.
- Claessens, S., and I. Diwan, "Liquidity, debt relief, and conditionality," in I. Husain and I. Diwan (Eds.), *Dealing With the Debt Crisis* (Washington, DC: The World Bank, 1989a), pp. 213-228.
- Claessens, S., and I. Diwan, "Market-based debt reduction," in I. Husain and I. Diwan (Eds.), *Dealing With the Debt Crisis* (Washington, DC: The World Bank, 1989b), pp. 258-275.
- Cohen, D., "How to cope with a debt overhang: Cut flows rather than stocks," in I. Husain and I. Diwan (Eds.), *Dealing With the Debt Crisis* (Washington, DC: The World Bank, 1989), pp. 229-237.
- Dornbusch, R., and S. Fischer, "Stopping moderate inflations," Paper presented at the Harvard University International Economics Workshop (Cambridge, MA: May 1, 1991).
- Eaton, J., "Debt relief and the international enforcement of loan contracts," *Journal of Economic Perspectives*, Vol. 4, No. 1 (1990), pp. 43-56.
- Faini, R., and J. de Melo, "Adjustment, investment and the real exchange rate in developing countries," *Economic Policy*, Vol. 11 (1990), pp. 491-519.
- Froot, K., D. Scharfstein, and J. Stein, "LDC debt: forgiveness, indexation, and investment incentives," *The Journal of Finance*, Vol. XLIV, No. 5 (1989), pp. 1335-1350.
- The Harvard Crimson*, "Bok, Salinas agree on debt exchange" (April 11, 1991), pp. 1, 5.
- The Harvard Crimson*, "Harvard signs first debt-for-scholarship deal with Ecuador" (July 13, 1990), pp. 1, 5.
- The Harvard Independent*, "A Latin rhythm" (April 18, 1991), pp. 3-4.
- Harvard University Gazette*, "Harvard-Ecuador plan

- leads to farming project" (Jan. 11, 1991), pp. 1, 8.
- Helpman, E., "Voluntary debt reduction: Incentives and welfare" *National Bureau of Economic Research Working Paper No. 2692* (1988).
- James, E., N. Alsalam, J. Conaty, and D. To, "College quality and future earnings: Where should you send your child to college?" *American Economic Review*, Vol. 79, No. 2 (1989), pp. 247-252.
- Kenen, P., "Organizing debt relief: The need for a new institution," *Journal of Economic Perspectives*, Vol. 4, No. 1 (1990), pp. 7-18.
- Krugman, P., "Market-based debt-reduction schemes," in J. Frenkel *et al.* (Eds.), *Analytical Issues in Debt* (Washington, DC: International Monetary Fund, 1989), pp. 258-278.
- Larrain, F., and A. Velasco, "Can swaps solve the debt crisis? Lessons from the Chilean experience," *Princeton Studies in International Finance*, No. 69 (1990).
- Lien, D., "Economic analysis of brain drain," *Journal of Development Economics*, Vol. 25, No. 1 (1987), pp. 33-43.
- The New York Times*, "Ecuador's debt is used to create scholarships" (July 12, 1990), p. 18.
- Reifenberg, S., "Turning bad debt into good programs? LASPAU explores debt-for-education program," Mimeo (Cambridge, MA: Harvard University, 1988).
- Sachs, J., "A strategy for efficient debt reduction," *Journal of Economic Perspectives*, Vol. 4, No. 1 (1990), pp. 19-29.
- Sachs, J., "The debt overhang of the developing countries," Mimeo (Cambridge, MA: Harvard University, 1986).
- Tilak, J., "Education and its relation to economic growth, poverty, and income distribution," *World Bank Discussion Papers* (Washington, DC: The World Bank, 1989).
- Van Wijnbergen, S., "Mexico's external debt restructuring in 1989/1990," Paper presented at the Harvard University International Economics Workshop (Cambridge, MA: Oct. 31, 1990).
- Warner, A., "Did the debt crisis cause the investment crisis?" Mimeo (Cambridge, MA: Harvard University, 1990).
- World Bank, *World Debt Tables 1989-90*, Vol. 1 (Washington, DC: The World Bank, 1989).

APPENDIX A: THE HARVARD DEBT FOR EDUCATION DEAL WITH ECUADOR

- Harvard buys \$5 million of Ecuadorian debt (0.05% of total) from US commercial banks at \$0.155 secondary market price.
Value of debt purchase: $\$5,000,000 (0.155) = \$775,000$
- Harvard donates debt paper to Fundacion Capacitar (FC), private Ecuadorian nonprofit institute.
- FC trades debt paper for local currency bonds worth one half the face value of the external debt (multiplied by the official exchange rate at the time of transaction = 796 sucres/\$).
Value of domestic bonds:
 $\$5,000,000 (0.50) (796) = 1,990,000,000$ sucres
- FC holds 15% of the bonds in trust until maturity one year later; domestic bonds have 44% rate of return.
Principal plus interest repayment from government:
 $1,990,000,000 (0.15) (1.44) = 429,840,000$ sucres
- FC invests proceeds in Ecuadorian money market fund. Interest earnings (assume 44% nominal return) will finance 50 Harvard faculty and students for 10 years to do research in Ecuador.
Finances for Harvard scholars in Ecuador (per year):
 $429,840,000 (0.44) = 189,129,600$ sucres
- FC sells remaining 85% of bonds to Ecuadorian commercial banks at an average 15% discount: short maturity government bonds sell at a discount on the domestic market. (Note the process required two months and some interest accrued.)
Bond sale proceeds (in domestic currency):
 $1,990,000,000 (0.85) (0.85) = 1,437,775,000$ sucres
plus interest earnings + 111,657,588
Total proceeds 1,549,432,588 sucres
- Ecuador banks hold domestic bonds until maturity.
Principal plus interest repayment from government:
 $1,990,000,000 (0.85) (1.44) = 2,435,760,000$ sucres
- FC converts proceeds into dollars with commercial banks at prevailing commercial exchange rate = 860 sucres/\$.
Dollar value of exchange at banks:
 $1,549,432,588/860 = \$1,801,666$
- FC invests \$1,801,666 in US money market fund; interest earnings (assume 10% nominal return) will finance 20 Ecuadorian students for 10 years at Harvard.
Finances for Ecuadorian students at Harvard (per year):
 $\$1,801,666 (0.10) = \$180,166$

Source: Based on figures from *The Harvard Crimson* (1990), p. 5; and from interviews with Tom Sanders of the Harvard Institute for International Development and Ned Strong of LASPAU.

APPENDIX B: SUMMARY OF FLOWS IN DOLLARS AND SUCRES

	<i>Dollars</i>		<i>Sucres</i>	
	Financial instrument	Credit/debit value	Financial Instrument	Credit/debit value
Agent				
Harvard	Cash	-775,000		0
Ecuador government	Debt Paper	+775,000 (market value)	Cash	-2,865,600,000
Ecuador banks	Cash	-1,801,666	Cash	+2,435,760,000
Ecuador money market fund for stipend payments to Harvard scholars			Cash	+429,840,000
US money market fund for Ecuador students to finance Harvard tuition	Cash	+1,801,666		

Source: Based on figures from *The Harvard Crimson* (1990), p. 5; and from interviews with Tom Sanders of the Harvard Institute for International Development and Ned Strong of LASPAU.