The Republic of Kazakhstan

Ex-Post Evaluation of Japanese ODA Loan Project

"Astana International Airport Reconstruction Project"

YAMAGUCHI Takao, Gyros Corporation



Project Location Map

Passenger Terminal Building Built by the Project

1.1 Background

The capital city of the Republic of Kazakhstan was relocated from Almaty to Astana in 1997. The International Astana Airport then, however, was superannuated with only one short runway. The airport was not able to accommodate large aircrafts, meet increasing traffic demand or satisfy the safety standards of ICAO (International Civil Aviation Organization). Under these circumstances, reconstruction of International Astana Airport became the top development priority for the Republic of Kazakhstan and the Kazakhstan government requested the Japanese government for Japanese soft loan to implement reconstruction project of International Astana Airport.

1.2 Project Outline

The project objective is to satisfy increasing air traffic demand and operational safety requirements at International Astana Airport by improving runways, terminal building, navigation systems, and other facilities, thereby effectively activating air transportation and contributing to economic development in the republic of Kazakhstan.

Approved Amount/ Disbursed Amount	22,222 million yen / 21,720 million yen
Exchange of Notes Date/ Loan Agreement	June, 1998 / December, 1998
Signing Date	
Terms and Conditions	Interest Rate: 2.2%
	Repayment Period: 30 years
	(Grace Period: 10 years)
	Conditions for Procurement:
	General Untied
	Consulting Services:
	Interest Rate: 0.75%
	Repayment Period: 40 years
	(Grace Period: 10years)
	Conditions for Procurement:
	General Untied
Borrower / Executing Agency(ies)	Government of the Republic of Kazakhstan /
	International Astana Airport ¹
Final Disbursement Date	June 2007
Main Contractor (Over 1 billion yen)	Alarko (Turkey) / Laing Limited (UK) /
	Marubeni (Japan) / Siemens Aktiengesellschaft
	(Germany) (JV)
Main Consultant (Over 100 million yen)	CH22M Hill International, Ltd. (UK) / Kisho
	Kurokawa Architect & Associates (Japan) /
	Pacific Consultants International (Japan)(JV) ²
Feasibility Studies, etc.	Feasibility study, the Government of Kazakhstan
	(Consigned to CH2Mhill (U.S.)), October 1997
Related Projects (if any)	Master Plan, JICA, "Air Transportation
	Development Study", March 1997

2. Outline of the Evaluation Study

2.1 External Evaluator

YAMAGUCHI Takao, President, Gyros Corporation

2.2 Duration of Evaluation Study

Duration of the Study: March, 2010 - December 2010

Duration of the Field Study: June 21, 2010 – June 30, 2010; October 18, 2010 – October 21, 2010

2.3 Constraints during the Evaluation Study

The evaluator was unable to obtain sufficient project information from IAA and thus was not able to evaluate organization of IAA or financial aspect including IRR. It was partly because almost all IAA employees who were familiar with the project left the organization when IAA was restructured.

¹ International Airport Astana (IAA) was established under the Ministry of Communication as the State Enterprise Company, SEC by Government Decree No.60 in 1998. IAA become Closed Stock Company, CSC on 27th September 2002, and become Joint Stock Company, JSC in May 2005. The share of IAA is 100 % owned by Astana City.

² At the beginning, the joint venture was consisted of 3 companies, CH2M-KKAA-PCI, however, CH2M was dropped out after the completion of the design stage.

Furthermore, IAA was cautious about disclosing information as it was involved in the course case with a contractor of the project regarding payment and defects of the project construction, which also made it difficult for the consultant to obtain accurate information on the project.

3. Results of the Evaluation (Overall Rating: A)

3.1 Relevance (Rating: a)

3.1.1 Relevance with the Development Plan of Kazakhstan

At the Time of Project Appraisal:

The Kazakhstan government announced the "Public Investment Program (1996-1998)"in November 1996, in which it placed the transportation as the most important sector for national development. Investment for the transportation sector accounted for the highest share of 36% then. The transportation infrastructure sector was also considered as a high priority sector even among seven priority sectors specified in the "National Development Plan towards 2030"announced in October 1997. Moreover, restructuring of the Astana International Airport was given the highest priority in the National Development Plan.

At the Time of Project ex-post Evaluation:

The Government of Kazakhstan set the goal to double GDP by 2010 and increase by 2.5 times by 2015 in the "Strategy to be One of the Top 50 Most Advanced Countries in the World" announced by the President in 2002. The transportation infrastructure sector was one of the seven priority sectors specified in the action programs to realize this strategy.

Above-mentioned "National Development Plan up to 2030" also remained in effect at the time of ex-post evaluation.

Furthermore, the transportation infrastructure development program specified by the Ministry of Transportation in 2006 places importance to conformity of the air transportation infrastructure to international standards and it was expected that the Astana International Airport play an important role both as an international gateway and national hub airport.

3.1.2 Relevance with the Development Needs of Kazakhstan

At the time of Project Appraisal:

It was urgently required then to improve economic and social infrastructure, which had had become a bottleneck for Kazakhstan with both population and economic bases scattered over the vast landlocked country. The transportation sector development, amongst all kinds of infrastructure development, was given a high priority.

The capital of Kazakhstan was transferred from Almaty to Astana in December 1997. However, facilities of the Astana Airport were very old and did not seem capable to accommodate rapidly increasing air transportation demand that was expected to come in the near future.

At the time of Project ex-post Evaluation:

The population of Astana city has more than doubled from 300,000 in 1998 to 700,000 in 2009 as city development has progressed and functions of the capital have been transferred. Astana, however, is approximately 960km away from Almaty, the old capital since the establishment of the country and the demand for air transportation between Astana and Almaty has remained high.

It could be said therefore that this project has been highly relevant to the country's development needs.

3.1.3 Relevance with Japan's ODA Policy

At the time of project appraisal in 1998, Central Asia and Caucasian countries including Kazakhstan were in the middle of the economic chaos following destruction of the Soviet Union and were continuing efforts to introduce democracy and the market economy. Japan's ODA policy toward these countries including Kazakhstan was to help them restructure aged economic infrastructure. ("1998 Annual Report on Japan's ODA Activities" (ODA White Paper))

This project has been highly relevant with the country's development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Efficiency (Rating: b)

3.2.1 Project Outputs

The project output is summarized in the below table.

	Plan	Actual
Civil Works	Runway	
	Renovation(1,000m x 45m, 7.5m shoulder)	Cancelled
	Extension(1,000m x 45m, 7.5 m shoulder)	Cancelled
	Taxiway:64,400m	No change
	Apron(Passengers• Cargos):48,000 m ²	$128,100 \text{ m}^2$
Architectural	Terminal buildings	
XX7 1	Passengers:20,800m ² -storey high	$24,950 \text{ m}^2 \text{ 6-storey high}$
Works	Cargos: 2,400 m ² 1-storey high	2,200 m ² 2-storey high
		Storage shed: 3,370 m ²
	Administration: 1,900 m ² 1-storey high	$3,350 \text{ m}^2$ 2-storey high
	Control tower:1-storey high	No change
	Maintenance building:3,400 m ² 1-storey high	6,110 m ² 2-storey high
Air	Radar Navigation Control (1 unit), transfer of	All cancelled
NT ·	radio antenna location (1 unit), airfield lighting	
Navigation	systems (1 unit)	
System		

Supporting	Power supply system: 1,000KVA 2 units	1,200KVA 2 units
T III		Transformer:809 m ²
Facilities	Solid waste disposal (1 units)	Cancelled
	Fuel supply pipeline • water supply facilities	
	Fuel hydrant:4 units	8 units
	Pipeline:2,000m	No change
	Fuel tank:3 units	3 units (3,000KL fuel tank)
	Aerobridge:4 units	6 units



Figure 1 Power Supply Facility Built by the Project



Figure 2 Control Tower Built by the Project

Main reasons for the above changes in the output are explained below.

(1) Civil Works

The runway renovation and extension work was cancelled from the project as the Government of Kazakhstan decided to implement it urgently by its own budget. The project planned to connect the existing apron with the new apron at the appraisal as the existing apron looked solid enough. However, the existing apron deteriorated faster than expected and was no longer capable of accommodating larges aircrafts. Therefore, the area size of the apron was expanded after the appraisal.

(2) Architectural Works

At the appraisal time, a simple shaped one-storey high building with flat roof structure was planned to be built. During the design stage, however, the Government of Kazakhstan requested for an arched shape building with cupola structure. Also, based on the traffic movement analysis, the numbers of departure gates (and consequently boarding bridges), immigration counters and check-in counters were increased.

The floor space of the ACC/ATC (air traffic control) administrative building was increased by 80% as Astana Airport became the main airport to control air traffic in the country following the new policy of air traffic control of the government.

Moreover, the control tower was cancelled from the scope of works as another national company called *Kazaeronavigatsia (KazaэpohaBuzaųuя)* was to be in charge of operation of air traffic control

for the whole country. The Government of Kazakhstan established a separate budget for *Kazaeronavigatsia* to build the control tower.

As volume of necessary ground service equipment increased, operation and maintenance equipment and the floor space increased by 80% from the original plan.

(3) Air Navigation System

It was cancelled out from the scope of works as *Kazaeronavigatsia* was to be in charge of operation of air traffic control for the whole country. The Government of Kazakhstan established a separate budget for *Kazaeronavigatsia* to purchase air navigational equipment.

(4) Supporting Facilities

The power supply capacity was increased from the original plan as the existing airport facilities to be covered and consequently the power demand increased.

The solid waste facility was excluded from the scope of works as the existing facility was to be reused. The number of fuel hydrant increased to cope with increase in existing airport facilities to be covered and to enable stable air fuel operation. The underground refuel hydrant pits were also added to fuel hydrant system for stable air fuel operation.

The specification and number of boarding bridges were changed based on the traffic movement analysis during the design stage. The specification of the boarding bridges was also changed

It was noted during the evaluation survey that the facilities were designed in such a way not to remove trees from the original places. Facilities are in excellent harmony with the surrounding environment with some buildings painted in green.

(5) Consulting Services

The period for supervision services was mainly prolonged due to extension of the contract period for construction.

It could be said that these changes in outputs were adequate as the Government of Kazakhstan implemented their part of the outputs as planned and there seems to have been no major problem in airport operation after the project implementation.

3.2.2 Project Inputs

3.2.2.1 Project Period (Sub-rating: b)

The project period was longer than planned.

The project period was 79 months from June 1999 to December 2005 (up to completion of the trial operation) in comparison to the original plan of 57 months from December 1998 to August 2003 (up

to completion of the trial operation). The actual project period was 136% of the original estimate although it is not possible to make a simple comparison as the project scope had been changed.

It could be said that the original project period was rather unrealistically short considering that it requires many kinds of government approval on design and materials in the country. The following are the main reasons for most significant delays.

(1) Contract with the consultants (approximately 6 months of delay):

Due to delay in final approval by the Government of Kazakhstan

(2) Design (approximately 6 months of delay):

The study for use of the runway lighting system for CATT III was implemented.

(3) Bidding (approximately 3 months of delay):

It required time to examine the changes in scope of works.

It took 3 months for the Government of Kazakhstan to approve the bidding evaluation report.

(4) Construction (approximately 5.5 months of delay):

The construction period had to go through three winters instead of originally estimated two as the construction launch was delayed.

3.2.2.2 Project Cost (Sub-rating: a)

The project cost was lower than planned.

The actual project cost was lower than the plan (86.2% of the plan) although it is not possible to make a simple comparison as the project scope was changed. Actual project cost was 22,122 million yen (foreign 22,122 million yen, domestic nil, yen soft loan of 22,122 million yen) in comparison to the original project cost of 25,677 million yen (foreign 22,122 million yen, domestic 3,555 million yen, yen soft loan of 22,122 million yen).

The original domestic project cost was to be used for civil work for runways and aprons but the work was cancelled out from the scope of works, hence no actual domestic project cost. Changes in scope of works including floor space and construction area pushed up construction costs. Consulting services increased as the project period was prolonged.

Meanwhile, cancellation of runway and air navigation system pushed down the actual project cost.

Although the project cost was lower than planned, the project period was longer than planned, therefore efficiency of the project is fair.

3.3 Effectiveness (Rating: a)

3.3.1 Quantitative Effects

3.3.1.1 Results from Operation and Effect Indicators

There were no indicators set up either at the appraisal or ex-post evaluation time. The following discussion is based on the air traffic, which is generally used as operation and effect indicators for airport infrastructure projects.

Actual number of passengers, the most important indicator for the airport, was 85.4% of the original plan for the year 2009. Nonetheless, average annual growth rate was stable at 12.5% for the domestic line, 25.4% for the international line and 16.4% for total during 2005-2009 period.

(1) Passengers

Actual number of domestic passengers (867 thousand) was 95.3% of the original plan (910 thousand), while that of actual international passengers (447 thousand) was 74.2% of the estimate (602 thousand) for the year 2009, as shown in Table 1. Total number of passengers (1,314 thousand) was 85.4% of the original plan (1,512 thousand) in the same year. Although the actual traffic did not meet the target, its growth rate was stable at 12.5% for the domestic line, 25.4% for the international line and 16.4% for total during 2005-2009 period.

	Estimate**			Actual***				
	2005	2009*	2010	2006	2007	2008	2009	Average growth
Domestic	675	910	980	609	849	933	867	12.5%
International	225	602	770	225	322	383	447	25.7%
Total	900	1,512	1,750	834	1,171	1,316	1,314	16.4%

Table 1 Passenger Movement – Forecast and Actual(Thousand)

* 2009 figures are made based on calculated average growth rate of 2005-2010.

** Completion goal: December 2002

***Actual completion: June 2005

(2) Cargos

There was no breakdown between domestic and international data for cargos at the time of appraisal. As summarized in Table 2, actual total cargo was 500 capacity ton³ in 2009, 2.1 times of the estimate (204.4 capacity ton). The growth was buoyant at 32.6% for the domestic, 14.5% for the international in 2005-2009.

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	Estimate**			Actual***				
	2005	2009	2010	2006	2007	2008	2009	Average growth
Domestic	N.A	N.A	N.A	150	320	350	350	32.6%
International	N.A	N.A	N.A	100	150	160	150	14.5%
Total	155.9	204.4	255.5	250	470	510	500	26.0%

Table2 Cargo – Forecast and Actual (Capacity Ton)

³ 1 capacity ton is approximately 2,832m³.

(3) Aircraft Movement

There was no forecast of aircraft movement at the time of appraisal. Actual aircraft movement was 8,313 for the domestic and 3,752 for international in 2009 as shown in Table 3. The growth was 28.9% for the domestic and 23.7% for international between 2005 and 2009.

	2005*	2006	2007	2008	2009	Average growth
Domestic	3,014	6,343	7,841	9,566	8,313	28.9%
International	1,601	3,151	4,889	4,709	3,752	23.7%
Total	4,615	9,494	12,730	14,275	12,065	27.2%

Table 3 Actual Aircraft Movement

3.3.1.2 Results of Calculations of Internal Rates of Return (IRR)

Financial internal rate of return (FIRR) of the project at the appraisal time was calculated at 3.0% based on the cash flow of revenues (airport revenues) and costs (construction costs and operation and maintenance costs). Economic internal rate of return (EIRR) of the project was 10.4% with economic benefits (airport revenues and reduced travel time) and economic costs (construction costs and operation and maintenance costs) at the appraisal time.

Due to the fact that data needed for quantitative analysis was not available, analysis for the internal rate of return was not possible.

3.3.2 Qualitative Effects

The project appraisal expected safety improvement in air transportation as qualitative effect of the project.

It was observed at the ex-post evaluation that the Astana Airport complied by international standards on safety distance space for aircraft movement at taxiways and aprons. The Ministry of Transportation and Communications also confirmed safety improvement at the airport based on the fact that there had been no critical aircraft accidents after the project was implemented. It is considered that the project had contributed to air transportation safety at the airport by having it comply with international standards and securing sufficient safety distance space for airplanes.

This project has somewhat achieved its objectives, therefore its effectiveness is fair.

3.4 Impact

3.4.1 Impact to Project Region

Table 4 summarizes historical trend of GRDP of Astana City and GDP of Kazakhstan in 2005-2008. Average growth rate was 12.5% for GRDP and 14.2% for GDP during the period.

	Astana City GRDP	Kazakhstan GDP	GRDP/GDP
2005	644	7,591	8.5%
2006	957	10,214	9.4%
2007	1,134	12,850	8.8%
2008	1,292	15,937	8.1%
2009	1302	-	-
Real average growth* (2005 - 2008)	12.5%	14.20%	-

Table 4 Trend of GRPD and GDP (Billion tenge)

* Real growth is net of consumer price index (average of 12.1% in the period).

Source: Statistical Bureau of Kazakhstan, ADB, CIA

The beneficiaries of the present project are (1) conversion passengers switched from conventional transportation modes (automobiles and trains) to airplanes and (2) new travellers using the Astana Airport.

(1) Reduced Travelling Time for Converted Travellers Kazakhstan Travellers⁴

Reduced travelling time and reduced travelling costs for passengers switching from automobiles to airplanes for a round trip between Astana and Almaty are calculated to be 18 hours and 6,205 tenge, which is equivalent to 15,300 tenge, or 2.6 day of GDP per capita if monetarized based on 2009 GDP estimate.

Total amount of reduced travelling time effect of these passengers was equivalent to 1.6% of GRDP per year in 2006-2008.

(2) Increased Spending by New Travellers

Total travel expenses spent by new travellers for a round trip between Astana and Almaty using the Astana airport is equivalent to 1.6% of GRDP on average per annum in 2006-2008.

It should be noted that above impact has been realized not only by this project but also by investment by all participants including other airports and airlines both in and out of the country, air port access transportation as well as deregulation in air transportation.

It could be said from the above that the project has contributed to efficiency and revitalization of

⁴ Transportation between Astana city and Almaty city is used as a typical case for the analysis here as aircraft movement between Astana Airport and Almaty Airport accounts for the largest 38% of the total at Astana Airport. Reduced travelling time and reduced travelling costs for conversion passengers switching from automobiles to airplanes are calculated to be 18 hours and 6,205 tenge. (Travelling costs of automobile include gasoline costs but exclude depreciation costs of automobiles and road wear costs.)

Astana City and the country by reducing travelling time of passengers. The project has also contributed indirectly to GRDP and GDP by increasing spending of new travellers.

3.4.2 Other Positive and Negative Impacts

3.4.2.1 Impacts on the Natural Environment

The appraisal report mentioned that there was a possibility that the project would cause noise problem in the future. It is reported that the Government of Kazakhstan did carry out EIA on its own and the project received the approval of the Ministry of Environment, Biology and Resources in September 1997.

3.4.2.2 Land Acquisition and Resettlement

The new terminal construction site had some scattered slots of land owned by *kolkhoz*, ex-Soviet style of collective farming system. But these slots of land were not cultivated with no residents. Thus the land purchase was completed without delay in August 1997. There were no people that had to be transferred to other area because of the project.

3.4.2.3 Noise

It was foreseen at the appraisal that the project might cause noise problem and that it become necessary to implement appropriate land use and regulation in accordance with the noise. However, there had occurred no aircraft noise problem as the surrounding area was agricultural and devastated land with no habitants.

3.5 Sustainability (Rating: a)

3.5.1 Structural Aspects of Operation and Maintenance

3.5.1.1 Airport Facilities

IAA is in charge of operation and maintenance of the airport facilities. There was not sufficient information provided on structure of operation and maintenance of IAA as it was involved in court case with the contractor. Those in charge of operation and maintenance at IAA confirmed at the interview that there existed no serious problem. Those in charge of finance, marketing and technical divisions also commented there was no problem in airport operation or structural aspect. From this, it could be concluded that there are no critical problems in structural aspect of operation and maintenance of airport facilities.

IAA was under supervision of the Ministry of Transportation and Communications at the appraisal time but became under the Astana City⁵ after the project implementation. Nevertheless, the Ministry

⁵ Policy to transfer state own enterprises to local authorities, all the share of IAA was transferred to the Astana City.

of Transportation and Communications remains responsible for supervision of operation and maintenance of fundamental facilities (runways, taxiways and aprons), operational structure, license issuing for airlines and pilots and airport inspection.

3.5.1.2 Control Tower

Kazaeronavigatsia is responsible for O&M of the control tower building. No information was provided from *Kazaeronavigatsia* regarding O&M structure of the control tower. There was no problem found in the tower building at the site observation.

3.5.2 Technical Aspects of Operation and Maintenance

IAA was established in June 1998, just before the project implementation and did not have enough engineers. IAA was planning to employ 54 engineers experienced in airport, machinery, electricity and construction fields from the Ministry of Transportation and Communications and national companies, of which 10 technicians were to be allocated to the Airport Construction Division. It was also planning to employ consultants with state-of-the-art skills in construction and O&M of airports.

Whether the above plan was realized or not was not made available at the ex-post evaluation as IAA was involved in court case with the project contractor. Information on present number of engineers or skill training programs were not disclosed either. Based on the interview on technical questions with IAA staff, however, it was judged that IAA had sufficient technical skills and capacity required for operation and maintenance. The site survey also found airport pavement and signs well maintained and almost all machinery and equipment being operational without a problem. From these facts, it could be said that IAA does not have a serious problem in technical aspect of O&M.

3.5.3 Financial Aspects of Operation and Maintenance

The finance department of IAA claims no budget shortage in O&M. It is not possible, however, to verify it as financial data on operation and maintenance was not made available to the evaluator.

3.5.4 Current Status of Operation and Maintenance

Civil and architectural facilities and equipment provided by this project were in good condition, except for the buildings which were involved in court case the contractor. The outer walls and pavement surrounding those buildings had not been maintained and wall painting had come off in some parts.

No major problems have been observed in the operation and maintenance system, therefore sustainability of the project is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The number of passengers at the Astana Airport increased by 12.5% for domestic and 25.7% for international lines per annum in 2005-2009 after the project implementation. The project has contributed to efficiency and revitalization of Astana City and Kazakhstan by reducing travelling time of passengers. The project has also contributed indirectly to economy of the city and the country through creation of new travellers.

In light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendation to the Executing Agency

The buildings under the lawsuit with the contractor are not maintained well with outer walls coming off in some parts needing repair. It is probable that the rain leaks would cause a problem for airport operation if these walls are not taken care of. It is recommended therefore that these walls be repaired immediately.

4.2.1 Recommendation to JICA

None.

4.3 Lessons Learned

1) All the project buildings are designed in such a uniform manner that the Japanese-loan financed buildings are easily recognized by everyone who see them. It has a good advertising effect and it should be applied to future yen loan projects.

2) The buildings and facilities were designed in such a way to keep existing trees at original places. The facility at the parking space was painted green and is in excellent harmony with the surrounding environment. It is environmentally friendly to design and construct buildings in harmony with the environment and should be applied to other future airport projects.

3) The project period was prolonged by 16 months in comparison to the plan as it took long time to get approval from the Government of Kazakhstan. It is therefore advised to plan for realistic project periods for future projects in the country well in consultation with the Kazakhstan Government at the time of appraisal.

Item	Original	Actual
1.Project Outputs		
Civil Works	Runway	
	Renovation(1,000m x 45m, 7.5m shoulder)	Cancelled
	Extension(1,000m x 45m, 7.5 m shoulder)	Cancelled
	Taxiway:64,400m	No change
	Apron(Passengers• Cargos):48,000 m ²	$128,100 \text{ m}^2$
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		Storage shed:3,370 m ²
	Administration: 1,900 m ² 1-storey high	$3,350 \text{ m}^2$ 2-storey high
	Control tower:1-storey high	No change
	Maintenance building:3,400 m ² 1-storey high	6,110 m ² 2-storey high
Air Navigation System	Radar Navigation Control (1 unit), transfer of	All cancelled
	radio antenna location (1 unit), airfield lighting	
	systems (1 unit)	
Supporting Facilities	Power supply system: 1,000KVA 2 units	1,200KVA 2 units
	Solid waste disposal (1 units)	Transformer:809 m ²
	Fuel supply pipeline • water supply facilities	Cancelled
	Fuel hydrant:4 units	8 units
	Pipeline:2,000m	No change
	Fuel tank:3 units	3 units (3,000KL fuel tank)
	Aerobridge:4 units	6 units
2.Project Period	January 1999 - August 2003	June 1999 - December 2005
	(56 months)	(79 months)
3.Project Cost		
Amount paid in Foreign	22.122 million ven	22.122 million ven
currency		
Amount paid in Local	3.555 million ven	0 ven
currency	(2.127 million tenge)	(0 tenge)
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Total	25,677 million ven	22,122 million ven
Japanese ODA loan portion	22,122 million yen	22,122 million yen
Exchange rate	1 tenge = 1.6712	
	(December 1997)	