Ways to modernise customs risk management in Mongolia

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Abstract

Customs authorities around the world are incorporating risk management strategies into their procedures in the context of achieving their two main goals: ensuring compliance with customs laws and regulations by the efficient control of the cross-border movement of goods, passengers, and transport means; and accelerating economic growth by facilitating foreign trade and investment. Risk management is an efficient and effective technique that stems from progress in science, technology and management innovation. This paper analyses the possibilities of applying comprehensive, systematic risk management approaches to the daily operations of the Mongolian customs authority with respect to its current organisational arrangements, human resources and information technology.

1. Introduction

The rapid growth of international trade limits the opportunity to control every trans-border movement of goods, passengers and transport means, and imposes restrictions on the inspection of such movements. Therefore, it is considered imperative that customs authorities introduce risk management strategies and practices into their activities, which requires a more effective approach to the planning and implementation of customs controls. More precisely, it needs to target those controls that have a high probability of detecting infractions.

Article VIII of GATT (1994) recognises the need to minimise 'the incidence and complexity of import and export formalities ... [by] decreasing and simplifying import and export documentation requirements'. Consequently, while controlling the cross-border movement of goods, passengers and transport means, customs authorities need to ensure compliance with the law while also focusing on trade facilitation. This is emerging as one of the main features of present-day international trade. Customs authorities also need to focus on the cost and efficiency of their own activities.

According to Widdowson (2005), the two elements of customs control — regulatory compliance and trade facilitation — are not contradictory. He argues that it is not necessary to decrease the control level in order to facilitate trade, and that it is not an imperative to increase trade barriers in exchange for an increase in control levels. He categorises customs management approaches in the following ways:

- 1. '(high control, high facilitation) represents a balanced approach to both regulatory control and trade facilitation, resulting in high levels of both'
- 2. '(low control, low facilitation) depicts the approach of an administration that exercises little control and achieves equally little in the way of facilitation ... crisis management approach'
- 3. '(low control, high facilitation) represents an approach in which facilitation is the order of the day ... laissez faire approach'
- 4. '(high control, low facilitation) represents a high-control regime ... the red tape approach' (Widdowson 2005, pp. 92-3).

Of these, the best approach is one of high control and high facilitation, which is achieved through the effective use of risk management strategies (Widdowson 2005). Baker (2002) also claims that 'Custom's [sic] recognition cannot actually review all shipments, however, has caused it to develop programs to evaluate and manage the risk to any noncompliance with laws and regulations which could result in loss or injury to trade, industry, or the public'.

Risk management should simplify customs procedures and improve economic efficiency. Ayyub (2003), who has studied the relationship between operational efficiency and risk management in customs organisations, argues that 'the control cost should not exceed risks cost due to the consequences (loss)'. Here, cost and benefit analysis should be applied to measure the contribution of risk management techniques and the risk management processes, by determining whether benefits exceed the cost of implementation or not.

For the purposes of improving the effectiveness of customs control and facilitating trade, customs authorities should not therefore seek to control all shipments, but instead should target high risk shipments. It is the authors' view that to do this, customs authorities need to apply intelligent risk assessment methods, including multi-criteria analysis and random selection.

Multi-criteria analysis is a popular approach to decision-making that incorporates different indicators into a single risk assessment indicator. Traditionally, multi-criteria analysis has involved calculating the simple weight of each indicator and estimating the weighted average. But now, multi-criteria analysis has been improved to a level that offers a number of ways to incorporate individual indicators into a single most preferred risk response that allows customs authorities to assess risk levels and identify a limited number of strategies for decision-making. In reality, risk management covers all activities that minimise negative impacts of those risks. These include the identification of control policies and types of risks; analysis, evaluation and monitoring of risk; risk control; and the prevention of risks. It is important to identify, analyse and evaluate the risks correctly to ensure the highest risks are effectively targeted.

Risk management targeting techniques rely on current knowledge and innovative methods, based on the application of intelligent IT systems that expedite customs inspections. Before these techniques were introduced, inspection was heavily dependent on the experience, judgment and insight of customs officers. IT-based intelligent risk analysis can also help minimise corruption by avoiding possible discretionary intervention by the customs authority in the selection of shipments to be controlled. This system collects all necessary data for risk analysis, enters these into risk analysis equations and produces results to be used for decision-making (Desiderio & Bergami 2014).

The application of such a system, or control selectivity system, calls for the development of methodologies that incorporate different indicators into a single risk assessment indicator. This can be done by entering different indicators into the risk assessment equation and calculating risk probability. The application of a selectivity system can be enabled by moving from customs risk descriptive statistics to a decision-making descriptive statistic approach (see Geourjon & Laporte 2005; Geourjon, Laporte & Rota Graziozi 2010; Laporte 2011).

2. Current situation of risk management in Mongolian Customs and its development trend

Mongolia is a landlocked country far from sea ports; it has poor industrial development and the country's economy is highly dependent on external trade. In view of this, since the 1990s the Mongolian Government has been implementing policies to liberalise the economy to facilitate foreign trade and investment with the purpose of accelerating the country's economic growth.

Mongolia formally introduced the concept of customs risk management in the early 2000s, but prior to that the customs authority officially reported attempts to analyse smuggled goods, and target high risk border points. It is important to note that Mongolia has been going through a number of specific development stages since it introduced its initial customs risk management strategies.

Mongolia became a member of the World Customs Organization (WCO) in 1991 and at that time, acceded to the WCO Harmonized System (HS) Convention. In 1994, the HS classification was adopted and the customs authority introduced the Automated System for Customs Data (ASYCUDA) for customs clearance. The introduction of the HS and information technology in customs practice forms part of the effort towards ensuring the correct duty assessment according to international standards, as does the improvement of customs valuation. Other initiatives include minimising face-to-face dealings for the purposes of eliminating corruption, facilitating foreign trade and increased information exchange. The Mongolian customs administration also used an internal Customs Automated Data Processing System (GAMAS) between 2001 and 2009. Since then, the Customs Automated Information System (CAIS) and the Customs External Portal System (CEPS) have been introduced, connecting all customs houses and branches.

Furthermore, Mongolia became a member of the World Trade Organization (WTO) in 1997, and in 2008, in conformity with international standards, the Mongolian Parliament passed the Customs Law and the Customs Tariff and Duty Law which have been integral to the continued customs modernisation efforts designed to facilitate trade.

Despite the fact that the customs authority established a risk management unit, strengthened its human resource capability and made continued efforts towards trade facilitation, these efforts were unfortunately a failure because there was no integrated information system that connected all stakeholders, including customs and tax authorities, banks and freight-forwarding agencies. As there was no integrated information system, the introduction of intelligent risk management also failed. Consequently, the Mongolian customs authority was primarily focused on physical inspection, post-clearance audit and a double control system. Clearly the application of a costly, time consuming and inefficient traditional control system has not met the needs of trade and investment facilitation. As a result, there is now a low level of customs offence detection, greater bureaucracy and corruption, a significant number of procedures required for customs clearance, time-consuming processes, and high operating costs for importers and exporters.

The Mongolian customs authority uses 'red', 'orange', and 'green' channels for customs control. The use of the red channel results in a mandatory physical and documentary inspection of the goods; the orange channel requires a mandatory check of documents only; and the green channel requires a few fields of the customs declaration to be checked. Table 1 shows statistical results of this selectivity system for the last three years. The current customs selectivity system does not target transactions, but rather economic entities, and classifies these entities by control channels, which gives rise to debate and discourse. Although the Mongolian customs authority operates three clearance channels, approximately half of the total exports and ninety per cent of total imports are selected for the red channel. This generates inefficiency and low productivity in customs practices and leads to excessive loss of time and resources of export and import entities.

Table 1: Customs clearance statistics 2012-2014

		Gr	een	Ora	ınge	R	ed	
YEAR		Amount	Percentage	Amount	Percentage	Amount	Percentage	TOTAL
	Export	2 376	3.43	5 264	7.61	61 542	88.96	69 182
2012	Import	10 466	5.10	19 673	9.59	175 047	85.31	205 186
	Total	12 842	4.68	24 937	9.09	236 589	86.23	274 368
	Export	5 168	7.99	28 714	44.37	30 827	47.64	64,709
2013	Import	10 144	5.09	38 519	19.34	150 541	75.57	199 204
	Total	15 312	5.80	67 233	25.48	181 368	68.72	263 913
	Export	25 132	10.77	96 284	41.26	111 927	47.97	233 343
2014	Import	930	0.49	16 354	8.65	171 769	90.86	189 053
	Total	26 062	6.17	112 638	26.67	283 696	67.16	422 396

Source: Annual report of Mongolian Customs General Administration, 2012-2014.

Because of the dominant use of the red channel, productivity is significantly lower than the global average, there is a heavy workload on customs inspectors, and customs control is rendered inefficient. Table 2 shows labour productivity of the Mongolian customs administration in comparison with the average of foreign trade turnover per employee in other selected countries.

Table 2: Foreign trade turnover per employee (million USD)

				Trade t	urnover	per employe	ee (million US	D)		
YEAR	China	USA	Japan	South Korea	Russia	Australia	Kazakhstan	Mongolia	Georgia	Fiji
2010	59.48	57.41	167.78	198.09	10.57	66.78	13.77	5.30	5.57	8.33
2011	72.55	65.00	190.88	238.43	13.49	86.76	21.20	9.04	7.71	9.88
2012	74.08	66.89	187.68	233.37	13.24	89.30	22.80	8.38	8.88	10.75
2013	72.96	63.01	173.42	239.25	14.11	85.46	23.38	7.97	5.91	11.14
2014	75.52	67.22	168.80	239.15	16.00	87.26	21.28	7.92	6.94	15.16
Average	70.92	63.90	177.71	229.66	13.48	83.11	20.49	7.72	7.00	11.05

Source: Compiled by the authors, based on WCO Annual Report 2010-2014, WTO intracen.org.

According to the World Bank's *Doing Business 2015* report, the performance of Mongolia's 'Trading Across Borders' indicator was highest in 2010, when it ranked 155 out of 183 economies, and was at its lowest in 2014, ranking 181 out of 189. In the same report, Mongolia ranked 72 out of 189 economies with its general business environment and in the last two years the country's ranking fell behind two economies (World Bank 2015). In 2015 Mongolia's ranking by the 'Trading Across Borders' indicator jumped by eight economies, ahead of 16 others. Even though Mongolia is ranked 47 out of 48 economies with the same income level, the trading across borders environment has performed poorly. Mongolia has recorded several gains in recent years; however, the country was worst on per container transportation cost terms and fared poorly in terms of time spent on container transportation.

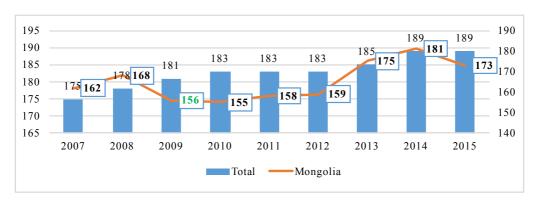


Figure 1: Trading Across Borders, Mongolia's statistics, 2007-2015

Source: World Bank, 'Trading Across Borders' indicators 2007-2015.

Clearly, costs and time spent on customs inspection affect the trading across borders indicators. In this regard, the World Bank (2015) argued that 'excessive document requirements, burdensome customs procedures, inefficient port operations and inadequate infrastructure all lead to extra costs and delays for exporters and importers, stifling trade potential'.

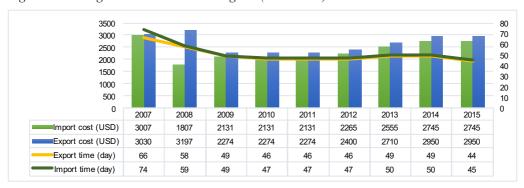


Figure 2: Trading Across Borders in Mongolia (2007-2015)

Source: World Bank, 'Trading Across Borders' indicators 2007-2015.

Based on averages over the last three years, the World Bank survey shows that Mongolia takes between 44 and 49 days to import goods, and between 45 and 50 days to export. According to this report, between 38.8 per cent and 43.2 per cent of total time spent on importation of goods is actually spent on inland transportation and port handling, while between 52.3 per cent and 57.1 per cent is spent on import documentation, and between 4.1 per cent and 4.5 per cent is spent on customs clearance and technical control. With regard to exportation, between 36.0 per cent and 40.0 per cent of total time spent is used for inland transportation and port handling, between 51.1 per cent and 56.0 per cent for export documentation and between 8.0 per cent and 8.9 per cent for customs clearance and technical control. While the time spent on each shipment differs depending on the nature, type and quantity of goods, the application of risk-based customs control could reduce the overall time spent on clearing both exports and imports.

			Ex	port					In	port		
STAGES	Ti	me (da	y)	C	ost (US	D)	Ti	me (da	ıy)	C	ost (US	D)
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
Document preparation	23	28	23	145	145	145	23	28	23	110	110	110
Customs clearance and inspection	2	2	2	160	160	160	4	4	4	150	150	150
Ports terminal handling	5	5	5	190	190	190	5	5	5	190	190	190
Inland transportion and handling	14	14	14	2,250	2,250	2,250	13	13	13	2,500	2,500	2,500
Total	44	49	44	2,745	2,745	2,745	45	50	45	2,950	2,950	2,950

Table 3: Predefined stages and documents for trading across borders in Mongolia, 2012-2014

Source: World Bank, 'Trading Across Borders' indicators 2013-2015.

3. Opportunities to introduce risk management in Mongolian customs practice and its social and economic benefits

While studying opportunities to introduce appropriate risk-based management arrangements in the Mongolian context through this study, we have used a particular risk management selectivity study of Laporte (2011). By processing descriptive statistical data from the current customs database, we have developed a methodology of risk-based selectivity of customs control.

After estimating the likelihood of noncompliance with the law, we determined that a declaration may be subject to an infraction if the binary variable equals 1, and that a declaration is unlikely to be subject to an infraction if the binary variable equals 0. For the control selectivity equation we have used five criteria for exportation and six criteria for importation, and calculated the probability of infraction. These include P_{HS} – HS classification of goods; P_1 – importer; P_{CO} – country of origin; P_T – customs terminal code; P_B – customs broker; P_{TR} – type of transportation means. The calculation of the probability of infraction provides an opportunity to assess the risk level of every shipment and to select the control channel in advance.

In order to calculate the probability of infraction based on the econometric equation developed by Laporte (2011) in the risk management selectivity model, three different estimations were used: (1) estimation by a linear probability (extreme value) model; (2) estimation using a LOGIT model; and (3) estimation using a PROBIT model. For the calculation of probability of infraction binary variables were applied to a total of 960.7 thousand customs declarations, including 367.2 thousand export and 593.4 thousand import declarations cleared between 2012 and 2014.

$$P_r = \alpha + \beta_1 f q_{_criteria \ 1_{ij}} + \beta_2 f q_{_criteria \ 2_{ij}} + \cdots ij + \beta_N f q_{_criteria \ N_{ij}} + \varepsilon_{ij} \ (1. \ 1)$$

Table 4 shows the test results for PROBIT, LOGIT, and Extreme Value models.

Table 4: Test result for Probit, Logit, and Extreme Value models

Independent		Probit			Logit		Ex	treme Val	ue
Variable	2012	2013	2014	2012	2013	2014	2012	2013	2014
С	13.83***	13.08***	42.36***	41.88***	40.68***	122.47***	7.36***	6.64***	22.32***
P _{HS}	0.22***	0.35***	-2.93***	0.69**	-1.03***	-6.12***	0.12**	-0.18***	-2.14***
Pı	0.16***	-0.57***	-3.89***	0.51***	-1.62***	-7.84***	0.08**	-0.31***	-3.32***
P _T	0.08***	-0.97***	-6.32***	0.23**	-2.58***	-16.79***	-0.04**	-0.58***	-4.29***
Pco	-0.71***	-3.72***	-1.63***	-2.05***	-10.15***	-3.75***	-0.39***	-2.07***	-0.96***
Рв	-0.08***	-7.34***	0.55***	-0.24***	-19.71***	1.15***	-0.05***	-4.12***	0.46***
P _{TR}	-16.43***	-3.4***	-31.85***	-47.35***	-13.02***	-97.61***	-9.03***	-1.40***	-14.38***
Prob (LR statistic)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of observations	925770	954641	967318	925770	954641	967318	925770	954641	967318
McFadden R-squared	0.012	0.050	0.322	0.012	0.048	0.298	0.012	0.052	0.349

^{** –} significance level is medium

Our study reveals that a significant level of goods classification and transport type criteria on the LOGIT and Extreme Value models were in the medium level of significance in 2012; importer and goods classification criteria on the Extreme Value model were in the medium level of significance only in 2012, while other criteria scored a high level of significance for each of the years.

^{*** –} significance level is high

Table 5: Distribution of percentage share of declarations for the intervals

Interval		e share of tons for the i		Percentag declaratio infraction			Percentag declaratio total decla	ns with inf	raction in
	2012	2013	2014	2012	2013	2014	2012	2013	2014

			Pro	bit				
21.98	72.42	62.45	21.98	72.39	62.40	0.00	0.03	0.05
39.02	25.67	20.74	38.81	25.57	20.63	0.21	0.10	0.11
12.37	1 77	13 60	12.31	1 70	13 47	0.06	0.07	0.13
								0.16
								0.22
								0.66
		39.02 25.67 12.37 1.77 21.47 0.10 5.16 0.05	39.02 25.67 20.74 12.37 1.77 13.60 21.47 0.10 1.38 5.16 0.05 1.84	21.98 72.42 62.45 21.98 39.02 25.67 20.74 38.81 12.37 1.77 13.60 12.31 21.47 0.10 1.38 21.30 5.16 0.05 1.84 5.12	39.02 25.67 20.74 38.81 25.57 12.37 1.77 13.60 12.31 1.70 21.47 0.10 1.38 21.30 0.09 5.16 0.05 1.84 5.12 0.04	21.98 72.42 62.45 21.98 72.39 62.40 39.02 25.67 20.74 38.81 25.57 20.63 12.37 1.77 13.60 12.31 1.70 13.47 21.47 0.10 1.38 21.30 0.09 1.22 5.16 0.05 1.84 5.12 0.04 1.62	21.98 72.42 62.45 21.98 72.39 62.40 0.00 39.02 25.67 20.74 38.81 25.57 20.63 0.21 12.37 1.77 13.60 12.31 1.70 13.47 0.06 21.47 0.10 1.38 21.30 0.09 1.22 0.17 5.16 0.05 1.84 5.12 0.04 1.62 0.04	21.98 72.42 62.45 21.98 72.39 62.40 0.00 0.03 39.02 25.67 20.74 38.81 25.57 20.63 0.21 0.10 12.37 1.77 13.60 12.31 1.70 13.47 0.06 0.07 21.47 0.10 1.38 21.30 0.09 1.22 0.17 0.01 5.16 0.05 1.84 5.12 0.04 1.62 0.04 0.01

				Lo	git				
[0,0,0,2]	21.64	72.22	(2.62	21.64	72.19	62.58	0.00	0.03	0.05
[0.0-0.2]	21.04	12.22	62.63	21.04	/2.19	02.38	0.00	0.03	0.03
[0.2-0.4]	39.71	18.83	3.61	39.50	18.79	3.52	0.21	0.04	0.09
[0.4–0.6]	11.90	8.62	13.92	11.84	8.59	13.71	0.06	0.03	0.21
[0.6-0.8]	21.60	0.12	4.81	21.43	0.07	4.65	0.17	0.05	0.16
[0.8–1.0]	5.15	0.21	5.03	5.11	0.15	4.87	0.04	0.06	0.16
Total	100.00	100.00	100.00	99.52	99.79	89.34	0.48	0.21	0.66

				Extrem	neValue				
[0.0-0.2]	29.59	59.32	42.39	29.59	59.29	42.35	0.00	0.03	0.04
[0.0-0.2]	29.39	39.32	42.33	27.37	37.27	72.33	0.00	0.03	0.04
[0.2–0.4]	28.66	25.34	31.79	28.45	25.28	31.66	0.21	0.06	0.13
[0.4–0.6]	15.59	13.73	19.80	15.53	13.65	19.51	0.06	0.08	0.29
[0.6–0.8]	20.99	1.32	4.02	20.82	1.30	3.93	0.17	0.02	0.09
[0.8–1.0]	5.17	0.29	2.00	5.13	0.27	1.89	0.04	0.02	0.11
Total	100.00	100.00	100.00	99.52	99.79	99.34	0.48	0.21	0.66

Source: Compiled by the authors.

In general, the results of our study show that by calculating the probability of infraction for every shipment, it is possible to determine a more appropriate control channel (red, orange or green).

Table 5 shows the distribution of percentage share of infraction probability $-P_r$, based on the output of PROBIT, LOGIT and Extreme Value models. These were grouped into five ranges of scores, with 0.2 scales, between 0 to 1 intervals.

According to the analysis on import clearance, infraction rates were 0.48, 0.21 and 0.66 per cent in 2012, 2013 and 2014 respectively. However, despite the fact that the infraction rate was less than 1.0 per cent of the total import clearance, 90.9 per cent of total imports were selected for the red channel, and 8.9 per cent selected for the orange channel in 2014.

According to the PROBIT model estimation, 62.45 per cent of total declarations were in the low level of infraction or at 0.0 - 0.2 intervals; 20.74 per cent were in the medium level or at the 0.2 - 0.4 interval; and 16.82 per cent were in the high risk level or at the 0.4 - 1 interval in 2014. As for declarations with infractions, 7.75 per cent of total declarations were at the low level; 15.94 per cent at the medium level; and 76.31 per cent at the high level intervals in 2014. And in 2014, according to this estimation, eight out of every 10,000 declarations are in the low level, 51 in the medium, and 301 in the high levels of risk probabilities.

The customs authority, as a government agency that serves business entities and civilians, should act in accordance with national laws and regulations by delivering its service in a transparent, fair and economically efficient manner. It also needs to focus on trade facilitation by respecting timeframes for business entities and civilians and by delivering accessible and innovative services. However, balancing control functions with trade facilitation is complicated, and by using a control selectivity method the customs authority could make significant progress towards achieving those two goals simultaneously.

We have estimated the social economic benefits of applying a control selectivity method in customs practice. This estimation output is shown in Appendix 1.

Per employee, trade turnover and time spent on customs clearance are key performance indicators of customs authorities. International experience shows that by making progress in those areas customs authorities can increase the productivity and efficiency of their activities and also improve trade facilitation. We used the following references to determine changes for the above indicators:

- The World Bank's Doing Business 2015 report: Customs clearance and inspection time¹ indicators were taken from the 'Trading Across Borders' section.
- Estimation of customs clearance time spent² was taken from the 'Joint study of Business Plus Initiative' and
 'Customs General Administration' (General Customs Administration of Mongolia and Business Plus Initiative,
 USAID 2013).
- Customs clearance time indicators³ calculated in accordance with WTO methodology were taken from the *Time release study report of Mongolian Customs 2014*.
- Customs clearance database of General Customs Administration.

According to customs statistics, in 2014, 6.2 per cent of goods declared at the Mongolian border were controlled through the green channel, 26.7 per cent through the orange channel, and 67.2 per cent through the red channel.

Based on the analysis of 2014 customs clearance data, we suggest goods in low risk level intervals should be processed through the green channel, goods in the medium risk level interval through orange, and the high risk level interval through the red channel, as shown in Table 6. According to our estimates, goods to be controlled through the red channel will be reduced to 20.0 per cent of total goods, those through the orange channel will be increased to 20.0 per cent, and those through the green channel will be increased to 60.0 per cent.

Table 6: The effect of risk-based control systems on key customs performance indicators

No	Customs administration performance indicators	Pre- implementation	Post- implementation
	Increase rate of customs declaration per employee (per cent)		
	– Doing Business 2015	100.0	100.0
1.	- Joint report of Business Plus Initiatives and Customs authority 2013	100.0	152.7
	– Mongolian customs administration time release study 2014	100.0	189.4
	Increase of foreign trade turnover per employee (per cent)		
	– Doing Business 2015	100.0	100.0
2.	– Joint report of Business Plus Initiatives and Customs authority 2013	100.0	152.7
	– Mongolian customs administration time release study 2014	100.0	189.4
	Export clearance time (day)		
2	– Doing Business 2015	2.0 days	2.0 days
3.	- Joint report of Business Plus Initiatives and Customs authority 2013	1.34 day	1.12 day
	– Mongolian customs administration time release study 2014	0.61 day	0.41 day
	Import clearance time (day)		
4	– Doing Business 2015	4.00 days	4.00 days
4.	- Joint report of Business Plus Initiatives and Customs authority 2013	1.11 day	0.42 day
	– Mongolian customs administration time release study 2014	0.83 day	0.33 day

By applying efficient and effective customs control selectivity methods, based on the calculation of probability of infraction, the customs authority has the possibility to effectively control more goods, passengers, and transport means than they do today. Moreover, the customs authority could reduce the number of employees that work on goods control, and the expertise of such employees could be used in other areas within the customs authority. This should lead to an improvement in customs performance and trade facilitation, and ensure compliance with relevant laws and legislation. Furthermore, the application of a control selectivity method should lead to a decrease in time required for customs clearance, improved quality of services, increased trade turnover resulting from faster delivery, and improved business efficiency.

4. Conclusions

The establishment of a risk management-based efficient and targeted customs control system provides a solution to achieving two fundamental goals: ensuring compliance with customs laws and regulations and facilitating foreign trade and investment. This kind of control system requires risk probability-based customs inspection. Moreover, a risk-based customs control framework is considered an essential part of a modern customs administration.

The risk-based selectivity control system suggested by the authors aims to ensure compliance by mobilising customs resources and improving the productivity of customs employees. Furthermore, it aims to facilitate trade, which requires a reduction in face-to-face dealings, simplification of customs procedures, fast service delivery and cost reduction. This study shows that well targeted customs control could improve the overall performance of customs administrations and could save costs and time spent on customs control.

In conclusion, it should be noted that the establishment of an efficient risk-based customs control system requires the following activities to be organised stage-by-stage: combining risk management with a customs development strategy; intensifying capacity building of the risk management unit and its employees; using a computer-aided selectivity control system; and developing related software to harmonise risk management with internal and post-clearance audits.

Appendix 1: Socioeconomic benefits of 'Risk management selectivity criteria system' methodology

l ₉		Export cle	Export clearance (days)	198)			Import cle	Import clearance (days)	ıys)			Total time (days)	(days)	Required employees (days)	mployees
trol lev		Clearance (number)		(sAı	Time (days)	(s.	Clearance (number)		(sʎı	Time (days)	(s				
nos smotsu)		7107	удогоройзэт мэЛ	Тіте рег сlеагапсе (da	7014	удогоройзэт wэ ^м	7107	удогоройзэт wэ ^м	Тіте рег сlеягяпсе (da	7014	удогоронзэт мэл	7014	удогоройзэт мэМ	7107	удогоройзэт мэй
	*-			2.00	50264.0	280008.0			4.00	3720.0	453724.0	53984.0	733732.0	207.1	2814.3
Стееп	***	25132	140004	0.97	24294.3	135337.2	930	113431	0.21	199.6	24340.4	24493.8	159677.6	93.9	612.5
	3***			0.27	0.0999	37101.1			0.17	161.6	19708.6	6821.6	56809.7	26.2	217.9
Э	_			2.00	192568.0	93338.0			4.00	65416.0	151244.0	257984.0	244582.0	989.5	938.1
Orang	7	96284	46669	1.10	105992.6	51374.8	16354	37811	0.26	4190.7	9689.1	110183.3	61063.9	422.6	234.2
	3			0.38	36507.7	17695.3			0.23	3768.2	8712.3	40275.9	26407.6	154.5	101.3
	-			2.00	223854.0	93338.0			4.00	687076.0	151244.0	910930.0	244582.0	3494.0	938.1
Red	7	111927	46669	1.62	181415.0	75642.7	171769	37811	1.20	205407.1	45215.7	386822.1	120858.3	1483.7	463.6
	3			0.88	6.89886	41224.3			06.0	153876.4	33872.4	252745.2	75096.6	969.4	288.0
	1				466686.0	466684.0				756212.0	756212.0	1222898.0	1222896.0	4690.6	4690.6
IstoT	7	233343	233343		311701.9	262354.7	189053	189053		209797.4	79245.1	521499.3	341599.8	2000.3	1310.2
	8				142036.5	96020.7				157806.2	62293.3	299842.7	158313.9	1150.1	607.2

References

- Ayyub, BM 2014, Risk analysis in engineering and economics, 2nd edn, Chapman & Hall/CRC.
- Baker, SW 2002, 'Customs risk management program responds to security needs', *Corporate counsel's international adviser*, No. 204.
- De Wulf, L & Sokol, JB 2005, Customs modernization handbook, World Bank, Washington, DC.
- Desiderio, D & Bergami, R 2011, 'Risk management techniques and their use by Customs', *Journal of Customs and Trade*, vol. 3, no. 1, pp. 81-91.
- General Customs Administration of Mongolia 2014, *Customs statistic information*, General Customs Administration of Mongolia, Ulaanbaatar.
- General Customs Administration of Mongolia & USAID Business Plus Initiative (BPI) 2013, *Business Plus Initiative (BPI) and Mongolian Customs Administration Report*, USAID, Mongolia.
- Geourjon, A-M & Laporte, B 2005, 'Risk management for targeting customs controls in developing countries: a risky venture for revenue performance?', *Public Administration and Development*, vol. 25, no. 2, pp. 105-13.
- Geourjon, A-M, Laporte, B & Rota Graziosi, G 2010, 'How to modernise risk analysis and the selectivity of customs controls in developing countries?', *WCO News*, no. 62, pp. 29-31.
- Laporte, B 2011, 'Risk management system: using data mining in developing countries' customs administrations', *World Customs Journal*, vol. 5, no. 1, pp. 17-27.
- Ndonga, D 2013, 'Managing the risk of corruption in Customs through single window system', *World Customs Journal*, vol. 7, no. 2, pp. 23-38.
- Widdowson, D 2003, 'Intervention by exception: a study of the use of risk management by customs authorities in the international trading environment', PhD thesis, University of Canberra.
- Widdowson, D 2005, 'Managing risk in the customs context', in L De Wulf & JB Sokol (eds), *Customs modernization handbook*, World Bank, Washington, DC.
- Williams, A & Emilio, G 1993, *Efficiency in the public sector: the theory and practice of cost–benefit analysis*, [illustrated], reprint, Elgar Publishing, CA.
- World Bank 2015, Doing business: trading across borders, World Bank, Washington, DC.
- World Customs Organization (WCO) 2000, *Kyoto Convention General Annex*, Chapter 6, 'Guidelines on Customs Control', WCO, Brussels.
- World Customs Organization (WCO) 2010, 'Background paper on risk management', World Customs Organization Risk Management Forum, 28-29 June 2010, WCO, Brussels.
- World Trade Organization (WTO) 1994, Article VIII of the GATT, Washington, DC.

Notes

- 1 World Bank 2015, p. 69. In this study, the time taken for customs clearance and inspection was not classified by customs control channel. Therefore, the results of this report are not sufficient to estimate the effect of our offering.
- 2 General Customs Administration of Mongolia 2013, 'Joint report of Business Plus Initiatives and Customs authority', pp. 1-32.
- 3 'Time release study of Mongolian Customs 2014' report, pp. 1-7.

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